

**Site Investigation**

**Final**

**Site-Specific Field Sampling Plan Attachment**

**for the Range 24A, Multi-Purpose Range, Parcel 108(7)/82Q-X**

**Fort McClellan**

**Calhoun County, Alabama**

**Prepared for:**

**U.S. Army Corps of Engineers, Mobile District**

**109 St. Joseph Street**

**Mobile, Alabama 36602**

**Prepared by:**

**IT Corporation**

**312 Directors Drive**

**Knoxville, Tennessee 37923**

**Delivery Order CK005**

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## ***List of Acronyms***

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ADEM	Alabama Department of Environmental Management
BHC	betahexachlorocyclohexane
BZ	3-quinuclidinol
CLP	Contract Laboratory Program
CERFA	Community Environmental Response Facilitation Act
CESAS	Corps of Engineers South Atlantic Savannah
COC	chain of custody
CSEM	conceptual site exposure model
DOD	U.S. Department of Defense
DQO	data quality objective
EBS	environmental baseline survey
EOD	explosive ordnance disposal
EPA	U.S. Environmental Protection Agency
ESE	Environmental Science and Engineering, Inc.
FFE	field flame expedient
FTMC	Fort McClellan
GB	sarin
GPS	global positioning system
HD	distilled mustard
IDW	investigation-derived waste
IT	IT Corporation
MTBD	Method(s) To Be Determined
ND	nondetects
OWS	oil/water separator
PCB	polychlorinated biphenyl
PID	photoionization detector
PSSC	potential site-specific chemicals
QA/QC	quality assurance/quality control
QAP	installation-wide quality assurance plan
RI	remedial investigation
SAIC	Science Applications International Corporation
SAP	installation-wide sampling and analysis plan
SFSP	site-specific field sampling plan
SHP	installation-wide safety and health plan

## ***List of Acronyms (Continued)***

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SI	site investigation
SSHP	site-specific safety and health plan
STB	supertropical bleach
SVOC	semivolatile organic compound
TNT	trinitrotoluene
USACE	U.S. Army Corps of Engineers
UXO	unexploded ordnance
VOC	volatile organic compound
WP	installation-wide work plan

## **Executive Summary**

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In accordance with Contract No. DACA21-96-D-0018, Delivery Order CK005, IT Corporation (IT) will conduct site investigation activities at the Range 24A, Multi-Purpose Range, Parcel 108(7)/82Q-X to determine the presence or absence of potential site-specific chemicals (PSSC) at this site. The purpose of this site-specific field sampling plan (SFSP) is to provide technical guidance for sampling activities at Range 24A, Multi-Purpose Range.

The Range 24A, Multi-Purpose Range, Parcel 108(7) falls within the "Possible Explosive Ordnance Impact Area" shown on Plate 10 of the FTMC Archive Search Report, Maps (USACE, 1998a). Range 24A has a operational history as a multi-purpose ordnance range where C4, trinitrotoluene (TNT), M4 burster, blasting caps, simulators, trip flares, detonation cords, and smoke-producing munitions and equipment were used. Therefore, IT will conduct unexploded ordnance (UXO) avoidance activities including surface sweeps and downhole surveys of soil borings.

Specifically, IT will collect 10 surface soil samples, 10 subsurface soil samples, 14 groundwater samples, (10 direct-push groundwater samples and 4 existing monitor wells), 3 surface water sample, 3 sediment sample, and 3 depositional soil samples at this site. Contaminant sources at the site include smoke munitions, fog oil, other petroleum products, solvents, metals, and chemical agent breakdown products. Therefore, chemical analyses of the samples collected during the field program will include volatile organic compounds (VOC), semivolatile organic compounds (SVOC), metals, chlorinated pesticides, polychlorinated biphenyls, chlorinated herbicides, organophosphorus pesticides, and nitroexplosives. Additionally, the monitor well samples will be analyzed for chemical agent breakdown products and sediment samples will be analyzed for total organic carbon and grain size. Results from these analyses will be compared with site-specific screening levels specified in the installation wide work plan (WP), and agency contaminant guidelines.

This SFSP attachment to the installation-wide sampling and analysis plan (SAP) (IT, 1998a) for Range 24A, Multi-Purpose Range, Parcel 108(7)/82Q-X will be used in conjunction with the site-specific safety and health plan (SSHP), and the installation-wide work plan (IT, 1998b), the habitat-specific screening ecological risk assessment work plan, and SAP. The SAP includes the installation-wide safety and health plan, waste management plan, and quality assurance plan. Site-specific hazard analyses are included in the SSHP.

## ***1.0 Project Description***

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### ***1.1 Introduction***

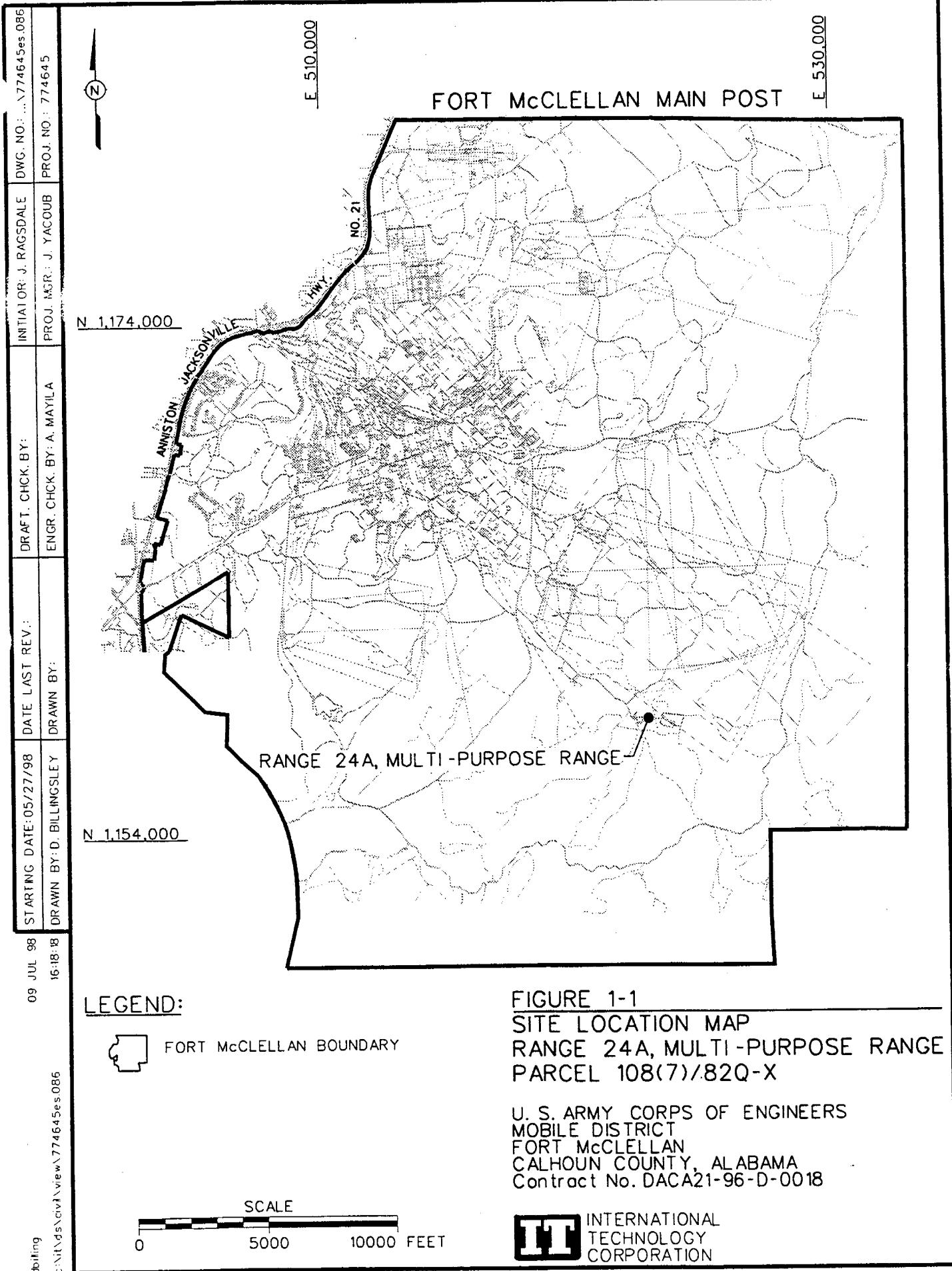
The U.S. Army is conducting studies of the environmental impact of suspected contaminants at Fort McClellan (FTMC) in Calhoun County, Alabama, under the management of the U.S. Army Corps of Engineers (USACE)-Mobile District. The USACE has contracted IT Corporation (IT) to provide environmental services for the site investigation (SI) of the Range 24A, Multi-Purpose Range, Parcel 108(7)/82Q-X, under Delivery Order CK005, Contract No. DACA21-96-D-0018.

This site-specific field sampling plan (SFSP) attachment to the installation-wide sampling and analysis plan (SAP) (IT, 1998a) for FTMC, has been prepared to provide technical guidance for sample collection and analysis at the Range 24A, Multi-Purpose Range, Parcel 108(7)/82Q-X site. This SFSP will be used in conjunction with the site-specific safety and health plan (SSHP) developed for the Range 24A, Multi-Purpose Range, Parcel 108(7)/82Q-X site, and the installation-wide work plan (WP) (IT, 1998b), the habitat-specific screening ecological risk assessment work plan, and SAP. The SAP includes the installation-wide safety and health plan (SHP), waste management plan, and installation-wide quality assurance plan (QAP).

### ***1.2 Site Description***

Range 24A, Multi-Purpose Range, Parcel 108(7)/82Q-X is located on the southeastern area of the FTMC Main Post (Figure 1-1). Historic maps have recorded the presence of several ranges in this area since at least 1956 (Environmental Science and Engineering, Inc. [ESE], 1998). FTMC Range Control records cover the period from 1980 through the present and indicate that ordnance used at this range consists of C4, trinitrotoluene (TNT), M4 burster, blasting caps, simulators, trip flares, detonation cords, and smoke-producing munitions and equipment. The Range 24A, Multi-Purpose Range, Parcel 108(70 falls within the "Possible Explosive Ordnance Impact Area" shown on Plate 10 of the FTMC Archive Search Report, Maps (USACE, 1998a).

Range 24A, Multi-Purpose Range, Parcel 108(7)/82Q-X, contains two range operations buildings, a fog oil drum storage site (a separate parcel addressed in another work plan), a smoke generator and maintenance line, a former chemical munitions disposal area (a separate parcel addressed in another work plan), and several ranges that were once included within Range 24A or were a part of Range 24A. One 500-gallon steel aboveground heating oil tank is located at the two range operation buildings at the west end of Range 24A. Range 24A covers approximately 48 acres (Figure 1-2).

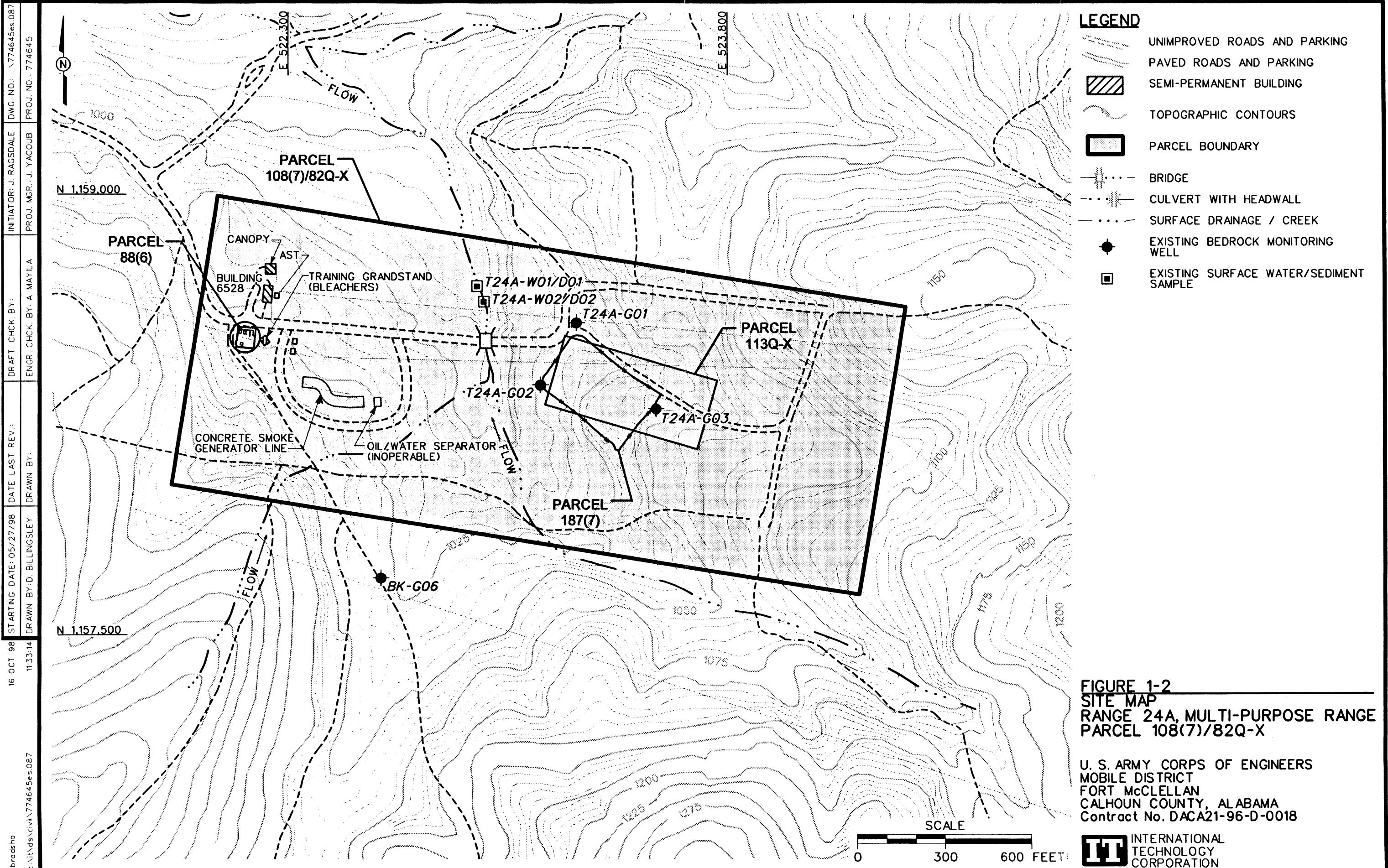


**FIGURE 1-1**  
**SITE LOCATION MAP**  
**RANGE 24A, MULTI - PURPOSE RANGE**  
**PARCEL 108(7)/82Q-X**

U. S. ARMY CORPS OF ENGINEERS  
MOBILE DISTRICT  
FORT McCLELLAN  
CALHOUN COUNTY, ALABAMA  
Contract No. DACA21-96-D-0018



INTERNATIONAL  
TECHNOLOGY  
CORPORATION



This range is now used for smoke, demolition, and field flame expedient (FFE) training. Tracer (white phosphorus) or sulfur materials may be present (ESE, 1998). Materials for FFE (fog oil) were historically stored in 55-gallon drums and are used at this range. This is a U.S. Army Chemical School (USACMLS) range. Mortar rounds were found nearby during aborted efforts to construct a dam (ESE, 1998).

A Fog Oil Drum Storage facility, Parcel 88(6), is located at the west entrance to Range 24A (Figure 1-2). The storage area is constructed as a bermed concrete pad (approximately 60 by 60 feet) that slopes to a floor drain connected to a OWS that collects spilled oil and precipitation. This facility covers an area of less than 1 acre. This site is addressed under a separate SI and SFSP for Range 24A, Fog Oil Drum Storage, Parcel 88(6), and is therefore not included in this SI effort.

There is a fog oil smoke-generator training and maintenance line located in the southwest quadrant that consists of a sloped concrete pad that is gently bermed. Fog oil smoke generators are set up on wooden tables at the concrete pad (smoke line) for operation and maintenance. At the east end (downgradient) of the concrete pad is an inoperative oil/water separator (OWS). There are not any records available on the period of operation for the OWS; however, its operation is suspected to have stopped prior to 1988 because this discharge was not included on the 1988 National Pollutant Discharge Elimination System permit.

Fog oil was used by the military to produce a fog obscurant to conceal troops, beach landings, and supply lines during World War II and the Korean War. Fog oil smoke may be produced from mobile personnel carriers (mobile smoke) or from stationary locations (static smoke). The petroleum distillate the military labels fog oil is also used as a diesel engine lubricating oil. Industrial uses of the oil are in metal working oils, cutting oils, newspaper ink, agricultural pesticides, livestock spray, and medicinal uses such as laxatives (3D, 1996)

Fog oil is the middle distillate product of crude petroleum oil. There is not an exact formulation for fog oil and it can be described as a mineral oil, a petroleum distillate or a hydrotreated heavy napthenic base oil (3D, 1996). The military has used standard grade fuels ( SGF 1 and SGF 2), diesel fuel, jet fuel JP4, and kerosene to produce smoke(3D, 1996). SGF 2 is similar to SAE No. 20 motor oil (Brubaker, et al., 1992). SGF 1 has not been supplied to the military since the 1970s and SFG 2 has been used since 1956. (3D, 1996). SFG 2 has been modified to reduce the aromatic hydrocarbons. An analysis of SGF 2 performed in August, 1995 indicated the presence of aliphatic, alkane and alkene hydrocarbons (3D, 1996). Aromatic hydrocarbons were not

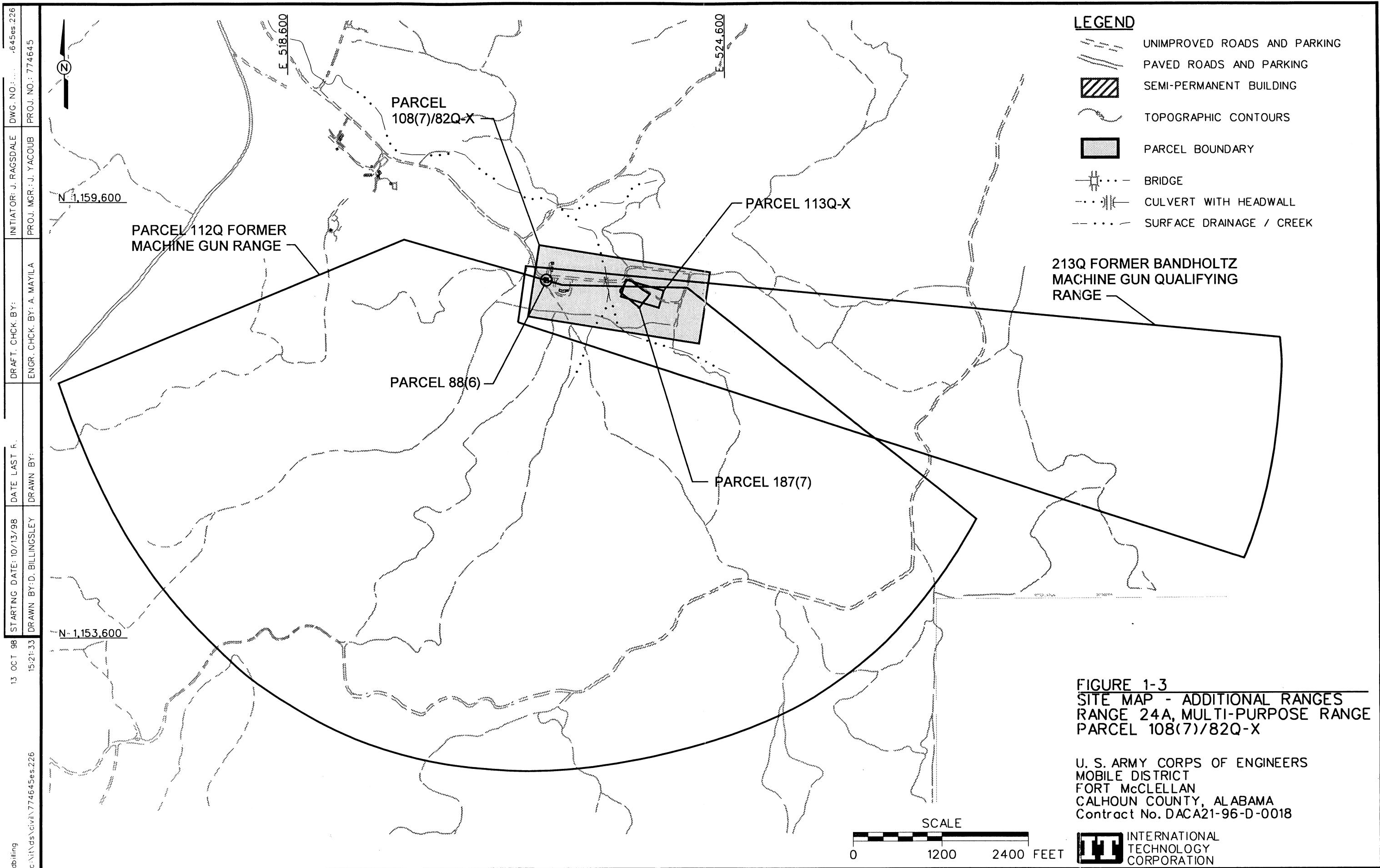
detected in the sample. Early fog oils contained approximately 50 percent aliphatic and 50 percent aromatic compounds.

Typical smoke generators used at FTMC consist of a small gasoline-powered ramjet engines. The fog oil is metered into the exhaust manifold of the engine at a predetermined rate partially controlled by a manually operated valve. The heat of the exhaust vaporizes the oil and ejects it through three nozzles into the atmosphere. As the vapor emerges from the nozzles at high velocity, large volumes of air are sucked into the vapor stream. The resulting dilution and cooling produces great numbers of condensation nuclei, around each of which a small droplet grows. Thus a dense cloud of fog aerosol is formed. In the normal mode of operation, the generator uses about 40 gallons per hour of fog oil and 3 gallons of gasoline.

Long-time FTMC personnel report that a submachine gun range was located in this area in the early 1960s. These FTMC personnel report that numerous berms are present in the area of Range 24A; this information is confirmed by historical maps (ESE, 1998). The oldest annotation of this range on a map (U.S. Army Map Service, 1956) identifies Range 24A as a rifle range. Another map (U.S. Army Map Service, 1959) identifies the firing points for a machine gun range and an explosive ordnance disposal (EOD) area within the current boundary of Range 24A (ESE, 1998).

The Former Chemical Munitions Disposal Area, Parcel 187(7), used for training, is within Range 24A. This site occupies approximately 1.5 acres and is located near the center of Range 24A (Figure 1-2). The area is fenced and posted. This former chemical munitions disposal training site was used from an unknown date until 1973. Training sites within the parcel included two square burning pits measuring approximately 16 by 16 feet. Training activities conducted here reportedly included disposal of chemical warfare munitions filled with phosgene, 3-quinuclidinol (BZ), sarin (GB), and distilled mustard (HD). The decontaminants used on this site were supertropical bleach (STB) and decontamination solution Number 2 (DS2) (ESE, 1998). The SI for this parcel (187[7]) will be addressed under a separate work authorization and a separate SFSP. This area will not be addressed in this Range 24A, Multi-Purpose Range site investigation.

The Former Machine Gun Range (Parcel 112Q) is located at the western end of current Range 24A (Figure 1-3). The dates of use and types of ordnance fired at this range are unknown, but the range appears on a 1959 map. No other information is available (ESE, 1998). The Former Demolition Area (113Q-X) is located in the central portion of the current Range 24A and includes most of the former Chemical Munitions Disposal Area, Parcel 187(7) (Figure 1-2). The dates of



use and types of activities that occurred here are unknown, but this area is also identified as a demolition area on a 1959 map (ESE, 1998).

A map titled "Ranges, 1948" (New South Associates, 1992) identifies a range in the southeast area of the Main Post as the Former Bandholtz Machine Gun Qualification Range (Parcel 213Q) and shows the approximate location of the current Range 24A (Figure 1-3). The direction of fire is toward the east and the surface danger zone is displayed on the map. Ordnance fired at this range is assumed to have been restricted to small arms. This location has been the site of several other ranges during the history of FTMC. No other information is available regarding the Former Bandholtz Machine Gun Qualification range, dates of use, or operation (ESE, 1998).

Range 24A was originally called Range 24 (USACE, 1998). It was built after World War II and on a 1949 Aerial Map, it was identified as a rifle range (USACE, 1998). It appears on the 1958 Range Map as Range 20, Submachine Gun Range. On the 1967 Range Map, the use is listed as Demolition Area, Range 24. By 1974, the name was changed to Range 24A. In 1990, the range is listed as Multi-Purpose (Smoke, Demo, & Flame Field) (USACE, 1998). Range 24A is located within the World War I Artillery Impact Area (USACE, 1998).

A map titled "Training Areas, Camp McClellan, 1921" identifies an artillery training area, Former Artillery Training Area (108Q-X), that occupies most of the Eastern Main Post and includes Range 24A (USACE, 1998). This training area extends from Moorman Hill in the north to Stanley Hill in the south, and includes much of Jerry Hill to the west. Maps from World War I and immediately after the Armistice do not show the firing points, firing lines or artillery and mortar ranges. From photographs and correspondence, range distances were 1500 to 5000 yards and used the Choccolocco Mountains to the east as a backdrop (USACE, 1998). This training area is consistent with reports of firing artillery into the Choccolocco Mountains prior to WWII. Also, this artillery training area covers most of the locations where large caliber artillery rounds have been discovered at FTMC. Ordnance fired at this training area is assumed to have consisted of large caliber fuzed rounds(USACE, 1998). The probable area is shown as the red cross-hatched area on Plate 3 of the June 1998 Final Archives Search Report (USACE, 1998a). Additional information was not available regarding this artillery training area, dates of use, or operation.

On June 11, 1996, Range 24 was inspected and remnants of a demolition area were not found (USACE, 1998a). Also, the same area as the former sub-machine gun range was walked and signs of ordnance were not found (USACE, 1998a).

The site elevation at this site ranges from approximately 985 feet to 1,145 feet. The depth to bedrock typically ranges from 2 feet to greater than 10 feet. The soils found at this site are composed of the Anniston and Allen Series soils. The depth to the water table for this series is usually greater than 20 feet. A small creek that bisects the site flows north along a small valley to the South Branch of Cane Creek. Shallow groundwater direction is probably controlled by the topography, and would likely flow to the east for the western half of the site and to the west for the eastern half of the site (Figure 1-2). Bedrock groundwater flows to the northwest across the site, based on water level measurements collected from the three existing monitoring wells installed around the Former Chemical Munitions Disposal Area, Parcel 187(7).

The Anniston and Allen Series of soils consists of strongly acid, deep, well drained soils that have developed in old local alluvium. The parent material washed from the adjacent higher lying Linker, Muskingum, Enders, and Montevallo soils, which developed from weathered sandstone, shale, and quartzite. These sites contain sandstone and quartzite gravel and cobbles, which measure as much as 8 inches in diameter on the surface and throughout the soil.

Soils at this site fall into the Anniston and Allen stony loams, 10 to 25 percent slopes, eroded (AcB2). This mapping unit has strong slopes, little erosion and stones, 3 to 8 inches in diameter. The color of the surface soil, a stony loam 4 to 8 inches thick, ranges from very dark brown to dark grayish-brown. At a depth of approximately 10 inches, the soil grades into a dark-red or dark reddish-brown, stony fine sandy clay loam. The alluvium ranges in thickness from 2 feet to more than 8 feet. Infiltration and runoff are medium, permeability is moderate, and the capacity for available moisture is high. Organic matter is moderately low (U.S. Department of Agriculture, 1961).

### ***1.3 Scope of Work***

The scope of work, for activities associated with the SI at this site, specified by the statement of work (USACE, 1998b), includes the following tasks:

- Develop the SFSP attachment.
- Develop the SSHP attachment.
- Conduct a surface and near surface unexploded ordnance (UXO) survey over all areas to be included in the supplemental sampling effort.

- Provide downhole UXO support for all intrusive drilling to determine buried downhole hazards.
- Collect ten surface soil samples, ten subsurface soil samples, ten direct-push groundwater samples, four existing monitor well groundwater samples, three surface water samples, three sediment samples, and three depositional soil samples to determine if potential site-specific chemicals (PSSC) are present at the Range 24A, Multi-Purpose Range, Parcel 108(7)/82Q-X site and to provide data to determine any future planned corrective measures and closure activities.

The possibility of UXO exists at Range 24A; therefore, UXO surface sweeps and downhole surveys of soil borings will be required to support field activities at Range 24A. The surface sweeps and downhole surveys will be conducted to identify anomalies for the purposes of UXO avoidance.

At completion of the field activities and sample analyses, draft and final SI summary reports will be prepared to evaluate the absence or presence of PSSC at this site, and to recommend further actions, if appropriate.

## ***2.0 Summary of Existing Environmental Studies***

---

ESE conducted an environmental baseline survey (EBS) to document current environmental conditions of all FTMC property (ESE, 1998). The study identified sites that, based on available information, have no history of contamination and comply with U.S. Department of Defense (DOD) guidance on fast track cleanup at closing installations. The EBS also provides a baseline picture of FTMC properties by identifying and categorizing the properties by seven criteria.

1. Areas where no storage, release, or disposal (including migration) has occurred.
2. Areas where only storage has occurred.
3. Areas of contamination below action levels.
4. Areas where all necessary remedial actions have been taken.
5. Areas of known contamination with removal and/or remedial action underway.
6. Areas of known contamination where required response actions have not been taken.
7. Areas that are not evaluated or require further evaluation.

The EBS was conducted in accordance with the Community Environmental Response Facilitation Act (CERFA) (CERFA-Public Law 102-426) protocols and DOD policy regarding contamination assessment. Record searches and reviews were performed on all reasonably available documents from FTMC, Alabama Department of Environmental Management (ADEM), U.S. Environmental Protection Agency (EPA) Region IV, and Calhoun County, as well as a database search of Comprehensive Environmental Response, Compensation, and Liability Act-regulated substances, petroleum products, and Resource Conservation and Recovery Act-regulated facilities. Available historic maps and aerial photographs were reviewed to document historic land uses. Personal and telephone interviews of past and present FTMC employees and military personnel were conducted. In addition, visual site inspections were conducted to verify conditions of specific property parcels.

During an SI in 1992 of the former Chemical Munitions Disposal Area (Area T24A), Parcel 187(7), a surface water sample and a sediment sample (T24A-D01/T24A-W01) were collected by U.S. Army Technical Escort Unit from the tributary of the South Branch of Cane Creek downgradient of the Former Chemical Munitions Disposal Area (Figure 1-2). The samples were

analyzed for HD and GB breakdown products. The sample results did not show the presence of chemical agent breakdown products (Table 2-1) (Science Applications Information Corporation [SAIC], 1993).

In 1994, a surface water sample and a sediment sample (T24A-W02/T24A-D02) were again collected from the tributary of the south branch of Cane Creek downgradient of the Former Chemical Munitions Disposal Area (Area T24A) (Figure 1-2). These samples were collected as part of a remedial investigation (RI) of the former Chemical Munitions Disposal Area (SAIC, 1995). These samples were analyzed for volatile organic compounds (VOC), semivolatile organic compounds (SVOC), explosives, metals, and HD and GB agent breakdown products. The analytical data for these samples did not show the presence of chemical agent breakdown products. The complete list of analytical results for these samples are contained in Appendix A of this SFSP. The sample results for the surface water sample (T24A-W02) contained trace metals. Low-level metals, including lead, arsenic, and benzyl alcohol (a laboratory contaminant), were detected in the sediment sample. These samples did not contain any chemical agent breakdown products or other organic compounds. A summary of the detected results from the analyses of these samples is presented in Table 2-2. This table also contains nondetects (ND), where the same analytes were not detected in some of the samples.

Screening and analysis of soil samples from within the former Chemical Munitions Disposal Area, Parcel 187(7) during the 1992 SI and the 1994 RI did not detect any chemical agents or agent breakdown products (SAIC, 1995).

Four monitoring wells were installed around the former Chemical Munitions Disposal Area (Area T24A), Parcel 187(7) (Figure 2-1) in 1994 as part of the RI (SAIC, 1995). Two rounds of groundwater samples were collected from the wells in 1994 and 1995. The groundwater samples were analyzed for VOCs, SVOCs, pesticides/polychlorinated biphenyls (PCB), explosives, metals, and HD, GB, and VX breakdown products. One well contained concentrations of benzene (100 to 200 micrograms per liter [ $\mu\text{g/L}$ ]), phenol (57  $\mu\text{g/L}$ , alpha-betahexachlorocyclohexane (BHC) (0.00424  $\mu\text{g/L}$ ), and pentachlorophenol (1.3 to 2  $\mu\text{g/L}$ ). Concentrations of trace metals and trace pesticides (alpha-BHC, isodrin, lindane, 4,4'-dichlorodiphenyldichloroethene) and the explosive 1,3,5,-trinitrobenzene were reported in the groundwater samples; however, second column confirmation analysis did not confirm the trace concentrations of organics and the values were regarded as non-detected analytes (SAIC, 1995). Neither chemical agents nor their breakdown products were detected in the monitor well samples. A summary of the detected results from the analyses of these samples is presented in

**Table 2-1**

**Surface Water and Sediment Sample Data<sup>(a)</sup>**  
**Range 24A, Muti-Purpose Range,**  
**Parcel 108(7)/82Q-X**

**1992 Site Investigation at the Former Chemical Munitions Disposal Area**  
**Fort McClellan, Calhoun County, Alabama**

**Sample Analysis for Chemical Agent Breakdown Products**

Site ID		T24A-W01	T24A-D01	
Site Type		Creek	Creek	
Sample Matrix		Water	Sediment	
Collection Date		4/24/92	4/24/92	
Parameters		Units	Units	
<b>Method UT02</b>				
Isopropylmethyl phosphonic acid		µg/L	ND(100)	µg/g
Methyl phosphonic acid		µg/L	ND(128)	µg/g
<b>Method UL04</b>				
1,4-Oxathiane		µg/L	ND(1.98)	µg/g
1,4-Dithiane		µg/L	ND(1.11)	µg/g
p-Chlorophenylmethylsulfoxide		µg/L	ND(4.23)	µg/g
p-Chlorophenylmethylsulfone		µg/L	ND(4.72)	µg/g
<b>Method UW22</b>				
Thiodiglycol		µg/L	ND(48.8)	µg/g
<b>Method T8</b>				
Diisopropylmethylphosphonate		µg/L	ND(10.5)	µg/g
Dimethylmethylphosphonate		µg/L	ND(15.2)	µg/g

<sup>a</sup> Science Applications International Corporation (SAIC) 1993, *Site Investigation Report, Fort McClellan, Alabama*, August.

µg/L - Micrograms per liter.

µg/g - Micrograms per gram.

ND - Analyte not detected at the reporting limit in parenthesis (X).

**Table 2-2**

**Summary of Detected Analytes for Surface Water and Sediment Sample Data<sup>a</sup>**  
**Range 24A, Multi-Purpose Range, Parcel 108(7)/82Q-X**  
**1994 Remedial Investigation of the Former Chemical Munitions Disposal Area**  
**Fort McClellan, Calhoun County, Alabama**

<b>Site ID</b>	T24A-W02		<b>T24A-D02</b>	
<b>Field Sample Number</b>	SAIC01		SAIC01	
<b>Site Type</b>	Creek		Creek	
<b>Sample Matrix</b>	Water		Sediment	
<b>Collection Date</b>	6/23/94		6/19/94	
<b>Parameters</b>	<b>Units</b>		<b>Units</b>	
Arsenic	µg/L	ND(2.35)	µg/g	5.38
Lead	µg/L	8.82	µg/g	11.6
Aluminum	µg/L	209	µg/g	9810
Barium	µg/L	23.5	µg/g	130
Beryllium	µg/L	1.12	µg/g	0.825
Calcium	µg/L	1900	µg/g	8140
Cobalt	µg/L	ND(16.8)	µg/g	3.77
Chromium	µg/L	ND(25)	µg/g	27
Copper	µg/L	18.8	µg/g	12.1
Iron	µg/L	409	µg/g	50,400
Potassium	µg/L	1890	µg/g	1720
Magnesium	µg/L	1110	µg/g	4950
Manganese	µg/L	19.5	µg/g	521
Sodium	µg/L	1100	µg/g	ND(38.7)
Nickel	µg/L	ND(32.1)	µg/g	6.25
Vanadium	µg/L	ND(27.6)	µg/g	31.8
Zinc	µg/L	ND(18)	µg/g	20.2
Benzyl Alcohol	µg/L	ND(4)	µg/g	0.062

<sup>a</sup>Science Applications International Corporation (SAIC) 1995, *Remedial Investigation Report, Fort McClellan, Alabama*, August.

µg/L - micrograms per liter.

µg/g - Micrograms per gram.

ND - Analyte not detected at the reporting limit in parenthesis (X).

N/A - not analyzed.

Table 2-3. This table also contains NDs, where the same analytes were not detected in some of the samples.

The complete list of analytical results for these samples are contained Appendix A of this SFSP.

Range 24A is identified as a Category 7 CERFA site. This CERFA site is a parcel where smoke munitions, fog oil, and other petroleum products were stored, and possibly released onto the site or to the environment, and/or were disposed on site property. Range 24A lacks adequate documentation and therefore requires additional evaluation to determine the environmental condition of the parcel.

Table 2-3

**Summary of Detected Analytes for Monitor Wells Sample Data<sup>a</sup>**  
**Range 24A, Multi-Purpose Range, Parcel 108(7)/82Q-X**  
**1994 Remedial Investigation of the Former Chemical Munitions Disposal Area**  
**Fort McClellan, Calhoun County, Alabama**

Site ID (Monitor Well Number)	T24A-G01 SAIC01 UB060-49	T24A-G01 SAIC03 UC00382	T24A-G02 SAIC03 UC00384	T24A-G02 SAIC04 UC00899	T24A-G03 SAIC01 UB06050	T24A-G03 SAIC03 UC00885	BK-G06 SAIC01 UB04884
Field Sample Number							
Laboratory Sample Number							
Site Type	Well	Well	Groundwater	Well	Groundwater	Well	Well
Sample Matrix	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Collection Date	10/23/94	2/1/95	2/1/95	4/24/95	10/23/94	7/15/94	2/2/95
Depth (Feet)	50	50.39	50.39	28.3	18.5	17.5	14.5
QC Sample Type	Original	Duplicate	Original	Original	Original	Original	Original
Associated Sample Number	SAIC03	SAIC04	N/A	N/A	N/A	N/A	N/A
Parameters	Units	Lead	Selenium	Selenium	Selenium	Selenium	Selenium
	µg/L	5.05 ND(2.53)	ND(4.47) 5	12.2 3.57	ND(4.47) ND(2.53)	ND(4.47) ND(2.53)	ND(4.47) ND(2.53)
	µg/L	10.5 4190	3.69 158	3.37 155	ND(2.44) 217	ND(2.44) 1890	ND(2.44) 1220
	µg/L	114	66	62.2	8.85	25.6	40.9
	µg/L	1.49	ND(1.12)	1.63	ND(1.12)	ND(1.12)	ND(1.12)
	µg/L	8110	21,200	19,900	1610	1450	776
	µg/L	23,300	9,410	9180	8650	9850	822
	µg/L	3880	8980	8850	1640	1670	10,600
	µg/L	11,700	10,400	10,000	17,900	15,800	ND(1240)
	µg/L	1550	1130	1100	1690	1530	7,200
	µg/L	1860	3350	3200	2030	3220	762
	µg/L	76.3	ND(18)	ND(18)	ND(18)	ND(18)	771
	µg/L						1150
Benzene	µg/L	100	200	200	ND(1)	ND(1)	ND(1)
bis(2-Ethylhexyl)phthalate	µg/L	19	12	ND(7.7) ND(2.2)	ND(7.7) ND(2.2)	ND(7.7) ND(2.2)	ND(7.7) ND(2.2)
Phenol	µg/L	57	ND(2.2)	ND(1)	ND(1)	ND(1)	ND(1)
Pentachlorophenol	µg/L	2	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)
alpha-BHC	µg/L	0.00424	ND(0.0025)	ND(0.0025)	ND(0.0025)	ND(0.0025)	ND(0.0025)
Isodrin	µg/L	0.0127 U	ND(0.0025)	0.00411 UB	0.00455 UB	0.00317 UB	ND(0.0025)
Lindane	µg/L	0.00432 Q	ND(0.0025)	ND(0.0025)	ND(0.0025)	ND(0.0025)	ND(0.0025)
4,4'-DDE	µg/L	ND(0.0039)	0.0138 U	0.0122 U	ND(0.0039)	0.00982 U	ND(0.0039)
1,3,5-Trinitrobenzene	µg/L	0.446 U	ND(0.21)	0.474 UB	ND(0.21)	0.287 U	0.511 UB
						ND(0.21)	ND(0.21)

<sup>a</sup> Science Applications International Corporation (SAIC) 1995, *Remedial Investigation Report, Fort McClellan, Alabama, August 1994*.

µg/L - Micrograms per liter.

ND - Not detected at the reporting limit in the parenthesis (X).

NA - Analysis not performed or item is not applicable.

U - Analysis is unconfirmed with second column analysis.

B - Analyte also found in the method blank sample or QC blank sample.

Q - Sample interference obscured peak of interest.

## **3.0 Site-Specific Data Quality Objectives**

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### **3.1 Overview**

The data quality objectives (DQO) process is followed to establish data requirements. This process ensures that the proper quantity and quality of data are generated to support the decision-making process associated with the action selection for Range 24A. This section incorporates the components of the DQO process described in the EPA publication EPA 540-R-93-071, *Data Quality Objectives Process for Superfund, Interim Final Guidance* (EPA, 1993). The DQO process as applied to Range 24A is described in more detail in Sections 3.2 and 4.3 of the WP. Table 3-1 provides a summary of the factors used to determine the appropriate quantity of samples, and the procedures necessary to meet the objectives of the SI and to establish a basis for future action at this site.

The samples will be analyzed using EPA SW-846 methods, including Update III Methods where applicable, as presented in Chapter 4.0 in this SFSP and Table 6-1 in the QAP. Data will be reported and evaluated in accordance with USACE-Civil Engineering South Atlantic Savannah (CESAS) Level B criteria (USACE, 1994) and the stipulated requirements for the generation of definitive data (Section 3.1.2 of the QAP). Chemical data will be reported via hard copy data packages by the laboratory using Contract Laboratory Program (CLP)-like forms. These packages will be validated in accordance with EPA National Functional Guidelines by Level III criteria.

### **3.2 Data Users and Available Data**

The intended data users and available data related to the SI at Range 24A presented in Table 3-1, have been used to formulate a conceptual site exposure model (CSEM) presented in Section 3.3. This CSEM was developed to support the preparation of this SFSP, which is necessary to meet the objectives of these activities and to establish a basis for future action at the site. The data users for the data and information generated during field activities are primarily the EPA, USACE, ADEM, FTMC, and the USACE supporting contractors. This SFSP, along with the necessary companion documents, has been designed to provide the regulatory agencies with sufficient detail to reach a determination as to the adequacy of the scope of work. The program has also been designed to provide the level of defensible data and information required to confirm or rule out the existence of residual PSSC in the site media.

Tab. - J-1

**Summary of Data Quality Objectives**  
**Site Investigation, Range 24A, Multi-Purpose Range,**  
**Parcel 108(7)82Q-X**  
**Fort McClellan, Calhoun County, Alabama**

Potential Data Users	Available Data	Conceptual Site Model	Media of Concern	Data Uses and Objectives	Data Types	Analytical Level	Data Quantity
EPA, ADEM USACE, DOD FTMC, IT Corporation Other contractors, and possible future land users	Surface water, sediment, and monitor well data	Contaminant Source Multi-purpose smoke munitions training range	Surface soil Subsurface Soil Groundwater	SI to confirm the presence or absence of contamination in the site media	Surface soil TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives	Definitive data in CESAS Level B data packages	10 direct push soil samples + QC

ADEM - Alabama Department of Environmental Management.

CESAS - Corps of Engineers South Atlantic Savannah.

PSSC - Potential site-specific chemical.

DOD - U.S. Department of Defense.

EPA - U.S. Environmental Protection Agency.

FTMC - Fort McClellan.

QC - Quality control.

VOC - Volatile organic compound.

SVOC - Semivolatile organic compound.

TAL - Target analyte list.

TCL - Target Compound list.

USACE - U.S. Army Corps of Engineers.

### **3.3 Conceptual Site Exposure Model, Human Health Evaluation**

The CSEM provides the basis for identifying and evaluating the potential risks to human health during the risk assessment process. Graphically presenting possible pathways by which a potential receptor may be exposed, including sources, release and transport pathways, and exposure routes, facilitates consistent and comprehensive evaluation of risk to human health, and helps to ensure that potential pathways are not overlooked. The elements necessary to construct a complete exposure pathway and develop the CSEM include:

- Source (i.e., contaminated environmental) media
- Contaminant release mechanisms
- Contaminant transport pathways
- Receptors
- Exposure pathways.

Contaminant release mechanisms and transport pathways are not relevant for direct receptor contact with a contaminated source medium.

Potential contamination located on Range 24A is due to multiple types of ordnance training and associated activities dating back to at least 1956 (ESE, 1998). Currently the site is used for smoke, demolition, and field flame expedient training. Range 24A, Multi-Purpose Range, Parcel 108(7) contains other parcels that are addressed under separate SFSPs. As detailed in Section 1.2, this site is located southeast of the Main Post and is bisected by a small creek that flows north along a small valley to the south branch of Cane Creek. It is assumed that releases of potential contaminants are restricted to surface soil, subsurface soil, and surface water. Potential contaminant transport pathways include dust emissions and volatilization from soil to ambient air, infiltration to subsurface soil, infiltration and leaching to groundwater, discharge of groundwater to the surface, erosion and runoff to the surface water and sediment, and volatilization from surface water.

Current site use is best described as open space industrial and is not deemed safe for public access until remediation has been completed because of the potential for UXO. Plausible receptors under current site use include the groundskeeper, construction worker, and recreational site user. Other potential receptors considered but not included under current site usage are the resident, because the site is not currently used for residential development; and the fish and venison consumption pathways, because neither activity is plausible at this site.

Future plans call for this site to become part of the Remediation Reserve, which will eventually be conveyed to the U.S. Fish and Wildlife Service for use as a National Wildlife Refuge (FTMC, 1997). The plausible receptors for the future site-use scenario include those identified under current land use with exposure scenarios that reflect unrestricted access, and the future resident scenario to add conservatism to the analysis. Contaminant release and transport mechanisms, source and exposure media, receptors and exposure pathways are summarized in Figure 3-1 and Table 3-1.

Assessment of potential ecological risk associated with sites or parcels (e.g., surface water and sediment sampling, specific ecological assessment methods, etc.) will be addressed in a separate document to be issued as the habitat-specific screening ecological risk assessment work plan.

### ***3.4 Decision-Making Process, Data Uses, and Needs***

The decision-making process consists of a seven-step process that is presented in detail in Sections 3.2 and 4.3 of the WP and will be followed during the SI at the Range 24A site. Data uses and needs are summarized in Table 3-1.

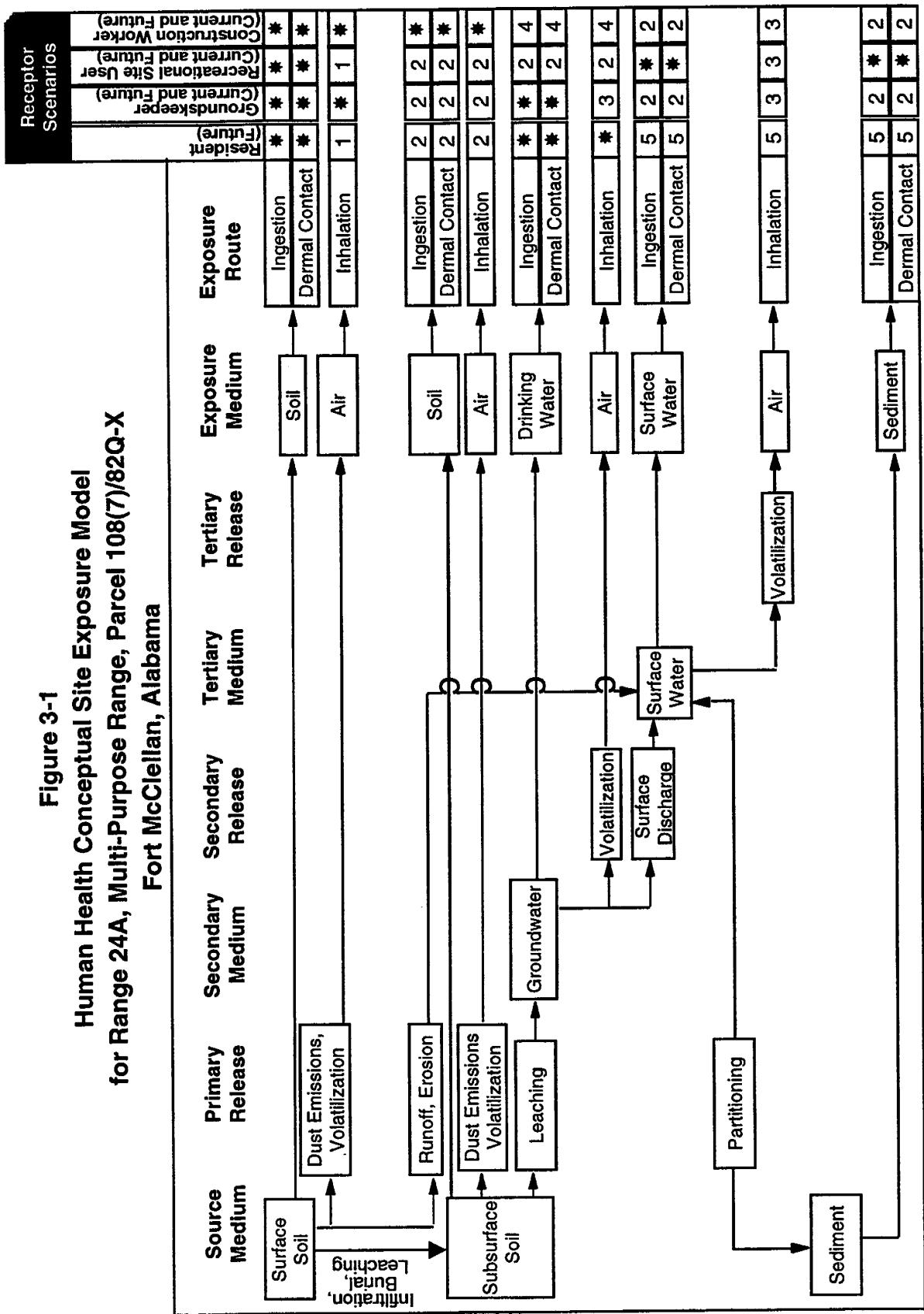
#### ***3.4.1 Risk Evaluation***

Confirmation of contamination at Range 24A will be based on comparing detected site chemicals of potential concern to site-specific screening levels developed in the WP. EPA definitive data with CESAS Level B data packages will be used to achieve detection limits sufficient to determine whether or not the established guidance criteria are exceeded in site media. Definitive data will be adequate for confirming the presence of site contamination and for supporting a feasibility study and risk assessment.

#### ***3.4.2 Data Types and Quality***

Surface and subsurface soil, groundwater, surface water, sediment, and depositional soil will be sampled and analyzed to meet the objectives of the SI at Range 24A. Quality assurance/quality control (QA/QC) samples will be collected for all sample types as described in Chapter 4.0 of this SFSP. Samples will be analyzed by EPA-approved SW-846 methods, where available; comply with EPA definitive data requirements; and be reported using hard copy data packages. In addition to meeting the quality needs of this SI, data analyzed at this level of quality are appropriate for all phases of site characterization, RI, and risk assessment.

**Figure 3-1**  
**Human Health Conceptual Site Exposure Model**  
**for Range 24A, Multi-Purpose Range, Parcel 108(7)/82Q-X**  
**Fort McClellan, Alabama**



### ***3.4.3 Precision, Accuracy, and Completeness***

Laboratory requirements of precision, accuracy, and completeness for this SI are provided in Section 9.0 of the approved QAP.

## **4.0 Field Activities**

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### ***4.1 UXO Survey Requirements and Utility Clearances***

Range 24A, Multi-Purpose Range, Parcel 108(7) site falls within the “Possible Explosive Ordnance Impact Area” shown on Plate 10 of the FTMC Archive Search Report, Maps (USACE, 1998a). Therefore, IT will conduct unexploded ordnance (UXO) avoidance activities, including surface sweeps and downhole surveys of soil borings.

#### ***4.1.1 Surface UXO Survey***

A UXO sweep will be conducted over areas that will be included in the sampling and surveying activities to identify UXO on or near the surface that may present a hazard to on-site workers during field activities. Low-sensitivity magnetometers will be used to locate surface and shallow-buried metal objects. UXO located on the surface will be identified and conspicuously marked for easy avoidance. Subsurface metallic anomalies will not be disturbed, and will also be marked for easy avoidance. UXO personnel requirements, procedures, and detailed descriptions of the geophysical equipment to be used are provided in Chapter 4.0 and Appendices D and E of the approved SAP (IT, 1998a)

#### ***4.1.2 Downhole UXO Survey***

During the downhole sampling activities, a downhole UXO survey will be performed to determine if buried metallic objects are present. UXO monitoring, as described in Chapter 4.0 of the SAP (IT, 1998a), will continue until undisturbed soils are encountered or the borehole has been advanced to 12 feet below ground surface, whichever is reached first.

#### ***4.1.3 Utility Clearances***

After the UXO surface survey has cleared the area to be sampled and prior to performing any intrusive sampling, a utility clearance will be performed at all locations where soil and groundwater samples will be collected, using the procedure outlined in Section 4.2.6 of the SAP. The site manager will mark the proposed locations with stakes, coordinate with the FTMC installation to clear the proposed locations for utilities, and obtain digging permits. Once the locations are approved (for both UXO and utility avoidance) for intrusive sampling, the stakes will be labeled as cleared.

## ***4.2 Environmental Sampling***

The environmental sampling program during the SI at Range 24A site includes the collection of ten surface soil samples, ten subsurface soil samples, ten direct-push groundwater samples, four

existing monitor well groundwater samples, three surface water samples, three sediment samples, and three depositional soil samples for chemical analyses. These samples will be collected and analyzed to provide data for characterizing the site in order to determine the environmental condition of the site and any further action to be conducted at the site.

#### **4.2.1 Surface Soil Sampling**

Surface soil samples will be collected from ten soil borings installed at Range 24A.

##### **4.2.1.1 Sample Locations and Rationale**

The surface soil sampling rationale is provided in Table 4-1. Proposed sampling locations are shown on Figure 4-1. Surface soil sample designations, depths, and required QA/QC sample quantities are listed in Table 4-2. The exact surface soil sampling locations will be determined in the field by the on-site geologist based on actual field conditions.

##### **4.2.1.2 Sample Collection**

Surface soil samples will be collected from the upper 1 foot of soil by direct-push technology in accordance with the procedures specified in Sections 4.7.1.1 and 4.9.1.1 of the approved SAP. Collected soil samples will be screened using a photoionization detector (PID) in accordance with Section 4.15 of the SAP. Surface soil samples will be screened for information only, not to select samples to be submitted for analysis. Sample containers, sample volumes, preservatives and holding times for the analyses required in this SFSP are listed in Section 5.0, Table 5-1 of the QAP. Sample documentation and chain of custody (COC) will be recorded as specified in Section 4.13 of the SAP. The samples will be analyzed for the parameters listed in Section 4.5 of this SFSP.

#### **4.2.2 Subsurface Soil Sampling**

Subsurface soil samples will be collected from ten soil borings installed at the Range 24A.

##### **4.2.2.1 Sample Locations and Rationale**

Subsurface soil samples will be collected from the soil borings proposed on Figure 4-1. The subsurface soil sampling rationale is presented in Table 4-1. Subsurface soil sample designations, depths, and required QA/QC sample quantities are listed in Table 4-2. The exact soil boring sampling locations will be determined in the field by the on-site geologist based on actual field observations.

**Sample Locations And Rationale**  
**Range 24A, Multi-Purpose Range, Parcel 108(7)/82Q-X**  
**Fort McClellan, Calhoun County, Alabama**

(Page 1 of 2)

Sample Location	Sample Media	Sample Location Rationale
FTA-108-GP01	Surface soil, subsurface soil, and groundwater	One soil boring and one temporary well will be placed adjacent to south side of concrete pad at smoke generator line. Sample data will indicate if the fog oil releases have occurred and if contaminated soil exists near smoke generator line.
FTA-108-GP02	Surface soil, subsurface soil, and groundwater	One soil boring and one temporary well will be placed at the downgradient end of the concrete pad for the smoke generator line near the oil/water separator (OWS). Sample data will indicate if the fog oil releases have occurred and if contaminated soil exists near smoke generator line.
FTA-108-GP03	Surface soil, subsurface soil, and groundwater	Proposed soil boring and one temporary well to be placed in Range 24A. Sample data will indicate if potential site-specific chemicals (PSSC) releases have occurred from historical use of Range 24A and if contaminated soil exists in this area of the site. Final location of soil boring will depend on field geologist's observations.
FTA-108-GP04	Surface soil, subsurface soil, and groundwater	Proposed soil boring and one temporary well to be placed in Range 24A. Sample data will indicate if PSSC releases have occurred from historical use of Range 24A and if contaminated soil exists in this area of the site. Final location of soil boring will depend on field geologist's observations.
FTA-108-GP05	Surface soil, subsurface soil, and groundwater	Proposed soil boring and one temporary well to be placed in Range 24A. Sample data will indicate if PSSC releases have occurred from historical use of Range 24A and if contaminated soil exists in this area of the site. Final location of soil boring will depend on field geologist's observations.
FTA-108-GP06	Surface soil, subsurface soil, and groundwater	Proposed soil boring and one temporary well to be placed in Range 24A. Sample data will indicate if PSSC releases have occurred from historical use of Range 24A and if contaminated soil exists in this area of the site. Final location of soil boring will depend on field geologist's observations.
FTA-108-GP07	Surface soil, subsurface soil, and groundwater	Proposed soil boring and one temporary well to be placed in Range 24A. Sample data will indicate if PSSC releases have occurred from historical use of Range 24A and if contaminated soil exists in this area of the site. Final location of soil boring will depend on field geologist's observations.
FTA-108-GP08	Surface soil, subsurface soil, and groundwater	Proposed soil boring and one temporary well to be placed in Range 24A. Sample data will indicate if PSSC releases have occurred from historical use of Range 24A and if contaminated soil exists in this area of the site. Final location of soil boring will depend on field geologist's observations.
FTA-108-GP09	Surface soil, subsurface soil, and groundwater	Proposed soil boring and one temporary well to be placed in Range 24A. Sample data will indicate if PSSC releases have occurred from historical use of Range 24A and if contaminated soil exists in this area of the site. Final location of soil boring will depend on field geologist's observations.
FTA-108-GP10	Surface soil, subsurface soil, and groundwater	Proposed soil boring and one temporary well to be placed in Range 24A. Sample data will indicate if PSSC releases have occurred from historical use of Range 24A and if contaminated soil exists in this area of the site. Final location of soil boring will depend on field geologist's observations.
FTA-108-BK-G06	Groundwater	Groundwater sample from an existing monitoring well installed near Range 24A. Sample data will indicate groundwater quality off site of Range 24A.
FTA-108-T24A-G01	Groundwater	Groundwater sample from an existing monitoring well installed near the Former Chemical Munitions Disposal Area (T-24A) within Range 24A. Sample data will indicate if groundwater has been affected by potentially contaminated soil from the former chemical disposal area or from other areas of the site.
FTA-108-T24A-G02	Groundwater	Groundwater sample from an existing monitoring well installed near the Former Chemical Munitions Disposal Area (T-24A) within Range 24A. Sample data will indicate if groundwater has been affected by potentially contaminated soil from the former chemical disposal area or from other areas of the site.
FTA-108-T24A-G03	Groundwater	Groundwater sample from an existing monitoring well installed near the Former Chemical Munitions Disposal Area (T-24A) within Range 24A. Sample data will indicate if groundwater has been affected by potentially contaminated soil from the former chemical disposal area or from other areas of the site.
FTA-108-SW/SD01	Surface water and sediment	Sample location is north central in the small intermittent tributary that bisects the site. Sample location is a potential downgradient sink for PSSC from the site. Evidence of PSSC mobility at points within the site would likely be reflected at this location.

**Sample Locations And Rationale**  
**Range 24A, Multi-Purpose Range, Parcel 108(7)/82Q-X**  
**Fort McClellan, Calhoun County, Alabama**

(Page 2 of 2)

Sample Location	Sample Media	Sample Location Rationale
FTA-108-SW/SD02	Surface water and sediment	Sample location is southeast of Parcel 108(7) site, upstream in the small intermittent tributary that bisects the site. Sample location is a potential upgradient sink for PSSC from above the site.
FTA-108-SW/SD03	Surface water and sediment	Sample location is north central of Parcel 108(7) sites, downstream in the small intermittent tributary that bisects the site. Sample location is a potential downgradient sink for PSSC from the site. Evidence of PSSC mobility at points within the site would likely be reflected at this location.
FTA-108-DEP01	Depositional soil	Sample location is northwest of Parcel 108(7), downgradient of the site. Sample location represents a low elevation area where surface water runoff could collect, and potentially percolate into the substratum or deposit suspended or dissolved materials after evaporation.
FTA-108-DEP02	Depositional soil	Sample location is north of Fog Oil Drum Storage Facility, Parcel 8(7), downgradient of the facility. Sample location represents a low elevation area where surface water runoff could collect, and potentially percolate into the substratum or deposit suspended or dissolved materials after evaporation.
FTA-108-DEP03	Depositional soil	Sample location is north of the Parcel 108(7) site, downgradient of the site. Sample location represents a low elevation area where surface water runoff could collect, and potentially percolate into the substratum or deposit suspended or dissolved materials after evaporation.

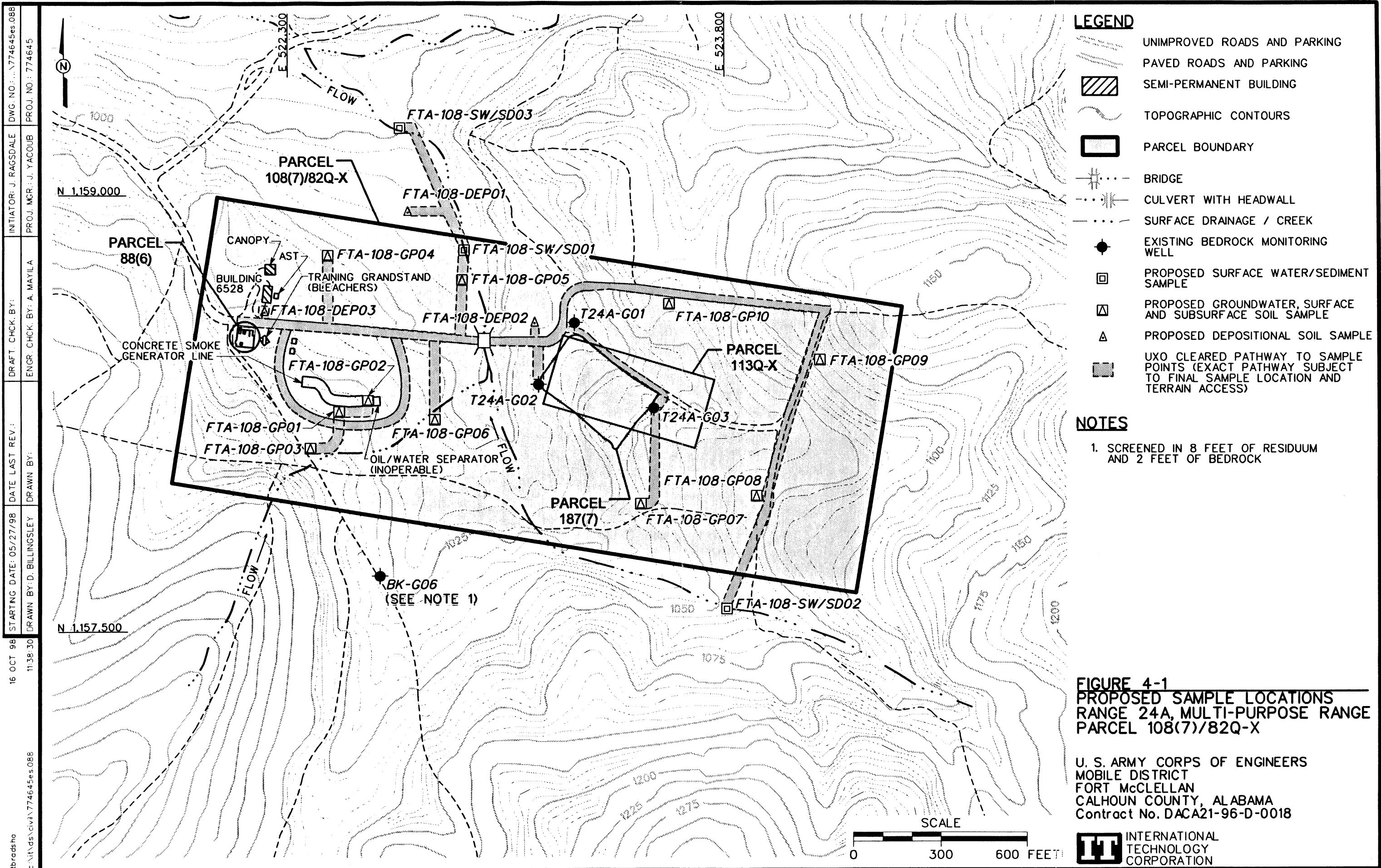


Table 4-2

**Soil, Sediment, and Depositional Soil Sample Designations and QA/QC Sample Quantities**  
**Range 24A, Multi-Purpose Range, Parcel 108/7**  
**Fort McClellan, Calhoun County, Alabama**

(Page 1 of 2)

Sample Location	Sample Designation	Sample Depth (ft)	QA/QC Samples		Analytical Suite
			Field Duplicate	Field Split	
FTA-108-GP01	FTA-108-GP01-SS-FT0001-REG	0-1	FTA-108-GP01-SS-FT0002-FD	FTA-108-GP01-SS-FT0003-FS	TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-108-GP02	FTA-108-GP01-DS-FT0004-REG FTA-108-GP02-SS-FT0005-REG	a 0-1	FTA-108-GP02-SS-FT0006-FD	FTA-108-GP02-SS-FT0007-FS	TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-108-GP03	FTA-108-GP03-SS-FT0008-REG FTA-108-GP03-DS-FT0010-REG	a 0-1			TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-108-GP04	FTA-108-GP04-SS-FT0011-REG FTA-108-GP04-DS-FT0012-REG	a 0-1			TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-108-GP05	FTA-108-GP05-SS-FT0013-REG FTA-108-GP05-DS-FT0014-REG	a 0-1			TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-108-GP06	FTA-108-GP06-SS-FT0015-REG FTA-108-GP06-DS-FT0016-REG	a 0-1			TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-108-GP07	FTA-108-GP07-SS-FT0017-REG FTA-108-GP07-DS-FT0018-REG	a 0-1			TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-108-GP08	FTA-108-GP08-SS-FT0019-REG FTA-108-GP08-DS-FT0020-REG	a 0-1			TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-108-GP09	FTA-108-GP09-SS-FT0021-REG FTA-108-GP09-DS-FT0022-REG	a 0-1			TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-108-DEF01	FTA-108-DEF01-DEF-FT0025-REG	a 0-1			TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives
FTA-108-DEF02	FTA-108-DEF02-DEF-FT0026-REG	0-1			TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroexplosives

Table 4-2

**Soil, Sediment, and Depositional Soil Sample Designations and QA/QC Sample Quantities**  
**Range 24A, Multi-Purpose Range, Parcel 108(7)**  
**Fort McClellan, Calhoun County, Alabama**

(Page 2 of 2)

Sample Location	Sample Designation	QA/QC Samples			Analytical Suite
		Field Duplicates	Field Spills	MS/MSD	
FTA-108-DEP03	FTA-108-DEP03-OEP-FT002-REG	0-1			TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Fertilizers, Nitroexplosives
FTA-108-SW/SD01	FTA-108-SW/SD01-SD-FT1001-REG	N/A			TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Fertilizers, Nitroexplosives, TOC, Grain Size
FTA-108-SW/SD02	FTA-108-SW/SD02-SD-FT1002-REG	N/A			TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Fertilizers, Nitroexplosives, TOC, Grain Size
FTA-108-SW/SD03	FTA-108-SW/SD03-SD-FT1003-REG	N/A			TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Fertilizers, Nitroexplosives, TOC, Grain Size

\*Actual sample depth selected for analysis will be at the discretion of the site geologist and will be based on field observation.

QA/QC - Quality assurance/quality control.

VOC - Volatile organic compound.

SVOC - Semivolatile organic compound.

TAL - Target analysis list.

MS/MSD - Matrix spike/matrix spike duplicate.

TOC - Total organic carbon.

NA - not applicable.

TCL - Target compound list.

REG - Field sample.

FD - Field duplicate.

FS - Field split.

#### **4.2.2.2 Sample Collection**

Subsurface soil samples will be collected from soil borings at a depth greater than 1 foot bgs in the unsaturated zone. The soil borings will be advanced and soil samples collected using the direct-push sampling procedures specified in Section 4.7.1.1 of the SAP (IT, 1998a).

Soil samples will be collected continuously for the first 12 feet or until either groundwater or refusal is reached. A detailed lithological log will be recorded by the on-site geologist for each borehole. At least one subsurface sample from each borehole will be selected for analyses. The collected subsurface soil samples will be field-screened using a PID in accordance with Section 4.15 of the SAP to measure samples exhibiting elevated readings above background. Typically, the subsurface soil sample showing the highest reading will be selected and sent to the laboratory for analysis. If none of the samples indicate readings above background using the PID, the deepest interval from the soil boring will be sampled and submitted to the laboratory for analyses. Subsurface soil samples will be selected for analyses from any depth interval if the on-site geologist suspects PSSCs at the interval. Site conditions such as lithology may also determine the actual sample depth interval submitted for analyses. More than one subsurface soil sample will be collected if field measurements and observations indicate a possible layer of PSSC and/or additional sample data would provide insight to the existence of any PSSCs.

Sample documentation and chain of custody will be recorded as specified in Section 4.13 of the SAP. Sample containers, sample volumes, preservatives, and holding times for the analyses required in this SFSP are listed in Section 5.0, Table 5-1 of the QAP. The samples will be analyzed for the parameters listed in Section 4.6 of this SFSP.

#### **4.2.3 Direct-Push Groundwater Sampling**

Groundwater samples will be collected from ten direct-push temporary wells completed in soil borings installed at Range 24A.

##### **4.2.3.1 Sample Locations and Rationale**

Groundwater samples will be collected from the locations shown on Figure 4-1. The groundwater sampling rationale is listed in Table 4-1. The groundwater sample designations, depths, and required QA/QC sample quantities are listed in Table 4-3. The exact sampling locations will be determined in the field by the on-site geologist based on actual field conditions.

Table 4-3

**Groundwater and Surface Water Sample Designations and QA/QC Sample Quantities**  
**Range 24A, Multi-Purpose Range, Parcel 108(7)**  
**Fort McClellan, Calhoun County, Alabama**

(Page 1 of 2)

Sample Location	Sample Designation	Sample Depth (ft)	QA/QC Sample*		Analytical Suite
			Field Duplicates	Split*	
FTA-108-GP01	FTA-108-GP01-GW-FT3001-REQ	Water Table <sup>a</sup>	FTA-108-GP01-GW-FT3002-FD	FTA-108-GP01-GW-FT3003-FS	TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroplosives
FTA-108-GP02	FTA-108-GP02-GW-FT3004-REQ	Water Table <sup>a</sup>			TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroplosives
FTA-108-GP03	FTA-108-GP03-GW-FT3005-REQ	Water Table <sup>a</sup>			TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroplosives
FTA-108-GP04	FTA-108-GP04-GW-FT3006-REQ	Water Table <sup>a</sup>			TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroplosives
FTA-108-GP05	FTA-108-GP05-GW-FT3007-REQ	Water Table <sup>a</sup>			TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroplosives
FTA-108-GP06	FTA-108-GP06-GW-FT3008-REQ	Water Table <sup>a</sup>			TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroplosives
FTA-108-GP07	FTA-108-GP07-GW-FT3009-REQ	Water Table <sup>a</sup>			TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroplosives
FTA-108-GP08	FTA-108-GP08-GW-FT3010-REQ	Water Table <sup>a</sup>			TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroplosives
FTA-108-GP09	FTA-108-GP09-GW-FT3011-REQ	Water Table <sup>a</sup>			TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroplosives
FTA-108-GP10	FTA-108-GP10-GW-FT3012-REQ	Water Table <sup>a</sup>			TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroplosives
FTA-108-BK-G06	FTA-108-BK-G06-GW-FT3013-REQ	8'-19' <sup>b</sup>			TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, CA Breakdown Products Nitroplosives
FTA-108-T24A-G01	FTA-108-T24A-G01-GW-FT3014-REQ	88' - 98'	FTA-108-T24A-G01-GW-FT3015-FD	FTA-108-T24A-G01-GW-FT3016-FS	FTA-108-BK-G06-GW-FT3013-MS/MSD FTA-108-T24A-G01-GW-FT3016-FS

Table 4-3

**Groundwater and Surface Water Sample Designations and QA/QC Sample Quantities**  
**Range 24A, Multi-Purpose Range, Parcel 108(7)**  
**Fort McClellan, Calhoun County, Alabama**

(Page 2 of 2)

Sample Location	Sample Designation	Sample Depth (ft)	QA/QC Samples		MS/MSD	Analytical Suite
			Field Duplicate	Field Split		
FTA-108-T24A-G02	FTA-108-T24A-G02-3W-FT-3017-REG	17' - 27' <sup>b</sup>				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, CA Breakdown Products, Nitroporphyrins
FTA-108-T24A-G03	FTA-108-T24A-G03-3W-FT3018-REG	26' - 36' <sup>b</sup>				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, CA Breakdown Products, Nitroporphyrins
FTA-108-SW/SD01	FTA-108-SW/SD01-SW-FT2001-REG	N/A				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroporphyrins
FTA-108-SW/SD02	FTA-108-SW/SD02-SW-FT2002-REG	N/A				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroporphyrins
FTA-108-SW/SD03	FTA-108-SW/SD03-SW-FT2003-REG	N/A				TCL VOCs, TCL SVOCs, TAL Metals, Chlorinated Pesticides, PCBs, Chlorinated Herbicides, Organophosphorus Pesticides, Nitroporphyrins

<sup>a</sup> Sample depth will depend on where sufficient first water is encountered to collect a water sample.

<sup>b</sup> Depth the well screen is installed in the well.

QA/QC - Quality assurance/quality control.

VOC - Volatile organic compound.

SVOC - Semivolatile organic compound.

TAL - Target analyte list.

MS/MSD - Matrix spike/matrix spike duplicate.

PCB - Polychlorinated biphenyl.

NA - not applicable.

CA - Chloroethane.

TCL - Target compound list.

REG - Field sample.

FD - Field duplicate.

FS - Field split.

#### **4.2.3.2 Sample Collection**

Groundwater samples will be collected in accordance with the procedures and methods specified in Section 4.7.1.1 of the SAP (IT, 1998a). Direct-push temporary wells will be completed in soil borings at the water table (at a depth where sufficient water is encountered) to collect a groundwater sample.

Sample documentation and COC will be recorded as specified in Section 4.13 of the SAP.

Sample containers, sample volumes, preservatives, and holding times for the analyses required in this SFSP are listed in Section 5.0, Table 5-1 of the QAP. The samples will be analyzed for the parameters listed in Section 4.5 of this SFSP.

#### **4.2.4 Monitoring Well Groundwater Sampling**

Groundwater samples will be collected from the four existing monitoring wells located around the Former Chemical Munitions Disposal Area in Range 24A.

##### **4.2.4.1 Sample Locations and Rationale**

Monitoring well groundwater samples will be collected from the four existing monitoring wells shown on Figure 4-1. Groundwater sampling rationale is presented in Table 4-1. The groundwater samples that are to be collected at the Range 24A, Multi-Purpose Range and their designated sample numbers, along with required QA/QC sample quantities, are listed in Table 4-3.

##### **4.2.4.2 Sample Collection**

Groundwater sample collection from existing monitoring wells will be conducted in accordance with the procedures and methods specified in 4.9.1.4 of the SAP for existing monitoring wells. Field measurements of groundwater samples will be conducted by the procedures listed in Section 4.17 of the SAP. Appropriate decontamination procedures will be followed as specified in Section 4.10 of the SAP. Sample documentation and chain-of-custody will be recorded as specified in Section 4.13 of the SAP. Sample containers, sample volumes, preservatives and holding times for the analyses required in this SFSP are listed in Section 5.0, Table 5-1, of the QAP. The samples will be analyzed for the suite of analyses listed in Section 4.5 of this SFSP.

#### **4.2.5 Surface Water Sampling**

Three surface water samples will be collected from the small creek that flows north to the South Branch of Cane Creek along the small valley that bisects the Range 24A site.

#### **4.2.5.1 Sample Locations and Rationale**

The surface water sampling rationale is listed in Table 4-1. Surface water samples will be collected from the locations proposed on Figure 4-1. The surface water sample designations and required QA/QC sample requirements are listed in Table 4-3. The exact sampling locations will be determined in the field by the ecological sampler, based on drainage pathways and actual field observations.

#### **4.2.5.2 Sample Collection**

Surface water samples will be collected in accordance with the procedures specified in Section 4.9.1.3 of the SAP. Sample documentation and COC will be recorded as specified in Section 4.13 of the SAP. Sample containers, sample volumes, preservatives and holding times for the analyses required in this SFSP are listed in Section 5.0, Table 5-1, of the QAP. The sample will be analyzed for the parameters listed in Section 4.5 of this SFSP.

### **4.2.6 Sediment Sampling**

Three sediment samples will be collected from the small creek that flows north to the South Branch of Cane Creek along the small valley that bisects the Range 24A site. The sediment samples will be collected at the same locations as the surface water samples described in Section 4.2.5.

#### **4.2.6.1 Sample Locations and Rationale**

The tentative location for the sediment samples are shown in Figure 4-1. Sediment sampling rationale are presented in Table 4-1. Sediment sample designations and required QA/QC sample requirements are listed in Table 4-2. The actual sediment sample points will be at the discretion of the ecological sampler based on the drainage pathways and actual field observations.

#### **4.2.6.2 Sample Collection**

Sediment samples will be collected in accordance with the procedures specified in Section 4.9.1.2 of the SAP. Sample documentation and COC will be recorded as specified in Section 4.13 of the SAP. Sample containers, sample volumes, preservatives and holding times for the analyses required in this SFSP are listed in Section 5.0, Table 5-1 of the QAP. The sediment samples will be analyzed for the parameters listed in Section 4.5 of this SFSP.

### **4.2.7 Depositional Soil Sampling**

Three depositional soil samples will be collected at the Range 24A.

#### **4.2.7.1 Sample Locations and Rationale**

The depositional soil samples will be collected in the drainage areas downgradient of the site features. The sampling rationale is listed in Table 4-1 and the proposed sampling location are shown on Figure 4-1. The depositional soil sample designation, depth, and required QA/QC sample quantities are listed in Table 4-2. The actual depositional soil sample points will be at the discretion of the ecological sampler, based on the physical characteristics of the drainage area and actual field observations.

#### **4.2.7.2 Sample Collection**

Depositional soil sample collection will be conducted in accordance with the procedures for surface soil sample collection specified in Section 4.9.1.1 of the SAP. Sample documentation and COC will be recorded as specified in Section 4.13 of the SAP. Sample containers, sample volumes, preservatives and holding times for the analyses required in this SFSP are listed in Section 5.0, Table 5-1 of the QAP. The sample will be analyzed for the parameters listed in Section 4.5 of this SFSP.

### **4.3 Decontamination Requirements**

Decontamination will be performed on sampling and nonsampling equipment to prevent cross-contamination between sampling locations. Decontamination of sampling equipment will be performed in accordance with the requirements presented in Section 4.9.1.1 of the SAP. Decontamination of nonsampling equipment will be performed in accordance with the requirements presented in Section 4.10.1.2 of the SAP.

### **4.4 Surveying of Sample Locations**

Sampling locations will be marked with pin flags, stakes, and/or flagging, and will be surveyed using either global positioning system (GPS) or conventional civil survey techniques, as necessary to obtain the required level of accuracy. Horizontal coordinates will be referenced to the Alabama State Plane Coordinate System, 1983 North American Datum (NAD83). Elevations will be referenced to the National Geodetic Vertical Datum of 1929 or the North American Vertical Datum of 1988 (soon to be established on site).

Horizontal coordinates for soil, sediment, and surface water locations will be recorded using a GPS to provide accuracy within 1 meter. Because of the need to use direct-push temporary wells to determine water levels, a higher level of accuracy is required. Temporary wells will be surveyed to an accuracy of 0.1 foot for horizontal coordinates and 0.01 foot for elevations, using survey-grade GPS techniques and/or conventional civil survey techniques, as required.

Permanent monitoring well locations will be surveyed by a registered professional land surveyor to provide the required accuracy of 0.1 foot for horizontal coordinates and 0.01 foot for elevations.

Procedures to be used for GPS surveying are described in Section 4.3 of the SAP. Conventional land survey requirements are presented in Section 4.19 of the SAP. All areas at this site must be cleared for UXO avoidance before any surveying activities will commence if outside areas cleared for sampling.

#### ***4.5 Analytical Program***

Samples collected at locations specified in Chapter 4.0 of this SFSP will be analyzed for the specific suites of chemicals and elements based the history of site usage, as well as the EPA, ADEM, FTMC, and USACE requirements. Target analyses for samples collected from Range 24A consist of the following list of analytical suites:

- Target Compound List Volatile Organic Compounds - Method 5035/8260B
- Target Compound List Semivolatile Organic Compounds - Method 8270C
- Target Analyte List Metals - Method 6010B/7000
- Chlorinated Pesticides - Method 8081A
- Polychlorinated Biphenyls - Method 8082
- Chlorinated Herbicides - Method 8051A
- Organophosphorus Pesticides - Method 8141A
- Nitroexplosives - Method 8330.

The sediment sample will be analyzed for the following list of parameters:

- Total Organic Carbon – Method 9060
- Grain Size – ASTM D-421/D-422.

In addition, groundwater samples collected from the existing monitor wells will be analyzed for the following list of chemical agent breakdown products:

- Method 8321CWM
  - Thiodiglycol
  - Isopropylmethylphosphonic acid (IMPA)
  - Ethylmethylphosphonic acid (EMPA)
  - Methylphosphonic acid (MPA)
  - Diisopropylmethylphosphonic acid (DIMP)

- Dimethylmethylphosphonic acid (DMMP)
- Method 8270CWM
  - 1,4-Oxathiane
  - 1,4-Dithiane
  - p-Chlorophenylmethylsulfoxide
  - p-Chlorophenylmethylsulfone.

The samples will be analyzed using EPA SW-846 methods, including Update III Methods where applicable, as presented in Table 4-4 in this SSFP and Table 6-1 in the QAP. Data will be reported and evaluated in accordance with CESAS Level B criteria (USACE, 1994) and the stipulated requirements for the generation of definitive data (Section 3.1.2 of the QAP). Chemical data will be reported via hard copy data packages by the laboratory using CLP-like forms. These packages will be validated in accordance with EPA National Functional Guidelines by Level III criteria.

#### ***4.6 Sample Preservation, Packaging, and Shipping***

Sample preservation, packaging, and shipping will follow the procedures as specified in Section 4.13.2 of the SAP. Completed analysis request/COC records will be secured and included with each shipment of coolers to the subcontract laboratory below:

Sample Receiving  
 Quanterra Environmental Services  
 5815 Middlebrook Pike  
 Knoxville, Tennessee 37921  
 Telephone: (423) 588-6401.

Split samples collected for the USACE laboratory will be shipped to the following address:

USACE South Atlantic Division Laboratory  
 Attn: Sample Receiving  
 611 South Cobb Drive  
 Marietta, Georgia 30060  
 Telephone: (770) 919-5270

#### ***4.7 Investigation-Derived Waste Management***

Management and disposal of the investigation-derived wastes (IDW) will follow procedures and requirements as described in Appendix D of the SAP. The IDW expected to be generated at the Range 24A, Multi-Purpose Range, Parcel 108(7)/82Q-X site will include decontamination fluids

Table 4-4

**Analytical Samples  
Site Investigation  
Range 24A Multi-Purpose Range, Parcel 108(7)  
Fort McClellan, Calhoun County, Alabama**

Parameters	Analysis Method	Sample Matrix	TAT Needed	Field Samples			QA/QC Samples <sup>a</sup>			QA Lab Total No. Analysis	
				No. of Points	No. of Events	No. of Field Samples	Dups (%)	QA Lab (5%)	MS/MSD (5%)	Trip Blank (1/strip)	
<b>Range 24A, Multi-Purpose Range: 17 water matrix samples (14 groundwater samples, 3 surface water samples); 26 soil matrix samples (10 surface soil and 10 subsurface soil samples, 3 sediment sample, and 3 dispositional soil samples)</b>											
TCL VOCs	B280B	water	normal	17	1	17	2	1	1	4	1
TCL SVOCs	B270C	water	normal	17	1	17	2	1	1	1	22
Cl Pesticides	8081A	water	normal	17	1	17	2	1	1	1	22
PCBs	8082	water	normal	17	1	17	2	1	1	1	22
OP Pesticides	8141A	water	normal	17	1	17	2	1	1	1	22
Cl Herbicides	8151A	water	normal	17	1	17	2	1	1	1	22
Total Metals	6010B/7000	water	normal	17	1	17	2	1	1	1	22
Nitroexplosives	8330	water	normal	17	1	17	2	1	1	1	22
CA break down product Method 8321 CWM <sup>b</sup>		water	normal	4	1	4	1	1	1	1	8
CA break down product Method B27/OCWMB <sup>b</sup>		water	normal	4	1	4	1	1	1	1	8
TCL VOCs	B280B	soil	normal	26	1	26	2	2	1	1	31
TCL SVOCs	B270C	soil	normal	26	1	26	2	2	1	1	31
Cl Pesticides	8081A	soil	normal	26	1	26	2	2	1	1	31
PCBs	8082	soil	normal	26	1	26	2	1	1	1	31
OP Pesticides	8141A	soil	normal	26	1	26	2	1	1	1	31
Cl Herbicides	8151A	soil	normal	26	1	26	2	1	1	1	31
Total Metals	6010B/7000	soil	normal	26	1	26	2	1	1	1	31
Nitroexplosives	8330	soil	normal	26	1	26	2	1	1	1	31
TOC	9060	sediment	normal	3	1	3				3	0
Grain Size	ASTM D-421/D-422	sediment	normal	3	1	3				3	0
<b>Range 24A, Multi-Purpose Range Subtotal:</b>											
				358		34		18		18	
										450	
											18

<sup>a</sup>Field duplicate, QA split, and MS/MSD samples were calculated as a percentage of the field samples collected per site and were rounded up to the nearest whole number.

Trip blank samples will be collected in association with water matrix samples for VOC analysis only. Assumed four field samples per day to estimate trip blanks. Equipment blanks will be collected once per event whenever sampling equipment is field decontaminated and re-used. They will be repeated weekly for sampling events that are anticipated to last more than 1 week. Assumed 20 field samples will be collected per week to estimate number of equipment blanks.

<sup>b</sup>Quanterra modified laboratory specific method approved by the USACE.

Ship samples to:

Quanterra Environmental Services  
5815 Middlebrook Pike  
Knoxville, Tennessee 37921  
Attn: John Reynolds  
Tel: 423-588-8401  
Fax: 423-584-4315

QA/QC - Quality assurance/quality control.  
MS/MSD - Matrix split/matrix spike duplicate.  
VOC - Volatile organic compound.  
SVOC - Semivolatile organic compound.

KN/423/MULTI108/4-4/1/01/1998(3:54 PM)

USACE Laboratory split samples  
are shipped to:

USACE South Atlantic Division Laboratory  
Attn: Sample Receiving  
611 South Cobb Drive  
Marietta, Georgia 30060-3112  
Tel: 770-919-5270

TOC - Total organic carbon.  
CA - Chemical Agent  
TCL - Target compound list.  
PCB - Polychlorinated biphenyls.

and disposable personal protective equipment. The IDW will be staged in the fenced area surrounding Buildings 335 and 336 while awaiting final disposal.

#### ***4.8 Site-Specific Safety and Health***

Safety and health requirements for this SI are provided in the SSHP attachment for the Range 24A, Multi-Purpose Range, Parcel 108(7)/82Q-X. The SSHP attachment will be used in conjunction with the SHP.

## ***5.0 Project Schedule***

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The project schedule for the SI activities is provided by the IT project manager to the BRAC Closure Team on a monthly basis.

## **6.0 References**

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- Science Applications International Corporation (SAIC), 1993, *Fort McClellan Site Investigation Report*, August.
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- U.S. Army Corps of Engineers (USACE), 1998a, *Archives Search Report, Maps, Fort McClellan, Anniston, Alabama*, June.
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- U.S. Environmental Protection Agency (EPA), 1993, *Data Quality Objectives Process for Superfund, Interim Final Guidance*, EPA 540-R-93-071, September.

**APPENDIX A**

**ANALYTICAL DATA**

**(RANGE 24A, MULTI-PURPOSE RANGE)**

**Table G-4. Data Summary Table: Soil/Sediment - Area T-24A Chemical Munitions Disposal Training Area, Fort McClellan, Anniston Alabama**

Site ID	T24A-D02	T24A-S03	T24A-S03	T24A-S04
Field Sample Number	SAIC01	SAIC01	SAIC01	SAIC02
Site Type	CREK	EXCV	EXCV	EXCV
Collection Date	6/19/04	5/24/04	5/24/04	5/24/04
Depth (ft)	0	5.5	5.5	5.5
Associated Field QC Sample - Site ID				
Associated Field QC Sample - Field Sample No.				
Associated Field QC Sample - Site ID				
Associated Field QC Sample - Field Sample No.				
<b>METALS/SOIL (ppm)</b>				
Laboratory ID Number	Units	CRL	UB04170	UB03199
Parameter				
Mercury	µg/g	0.05	LT	0.05**
Antimony	µg/g	3	LT	3.81**
Arsenic	µg/g	2.5	5.38**	7.33**
Lead	µg/g	0.467	11.6**	20.0**
Selenium	µg/g	0.449	LT	0.449**
Silver	µg/g	0.803	LT	0.803**
Aluminum	µg/g	11.2	0.803**	2730.0**
Boron	µg/g	6.84	LT	16.7**
Barium	µg/g	3.29	130**	172**
Beryllium	µg/g	0.427	0.828**	0.937**
Calcium	µg/g	25.3	8140**	8530**
Cadmium	µg/g	1.2	LT	1.2**
Cobalt	µg/g	2.5	3.77**	9.77**
Chromium	µg/g	1.04	27**	34.4**
Copper	µg/g	2.84	12.1**	198**
Iron	µg/g	6.66	60400**	42000**
Potassium	µg/g	131	1720**	2180**
Magnesium	µg/g	10.1	4850**	1720**
Manganese	µg/g	9.87	521**	618**
Molybdenum	µg/g	14.3	LT	14.3**
Sodium	µg/g	38.7	LT	159**
Nickel	µg/g	2.74	8.26**	17**
Tin	µg/g	7.43	LT	7.43**
Tellurium	µg/g	14.9	LT	14.9**
Theilium	µg/g	34.3	LT	34.3**
Vanadium	µg/g	1.14	31.8**	22**
Zinc	µg/g	2.34	20.2**	458**
<b>VOLATILES/SOIL/GC/MS (ppm)</b>				
Laboratory ID Number	Units	CRL	UB04170	UB03199
Parameter				
1,1,1-Trichloroethane	µg/g	0.2	LT	0.2**
1,1,2-Trichloroethane	µg/g	0.33	LT	0.33**
1,1-Dichloroethane	µg/g	0.27**	LT	0.27**
1,1-Dichloroethene	µg/g	0.49	LT	0.49**
1,2-Dichloroethane	µg/g	0.32	LT	0.32**
1,2-Dichloroethene	µg/g	0.32	LT	0.32**
1,2-Dichloropropane	µg/g	0.53	LT	0.53**
1,3-Dichlorobenzene	µg/g	0.14	LT	0.14**

**Table G-4. Data Summary Table: Soil/Sediment - Area T-24A Chemical Munitions Disposal Training Area,  
Fort McClellan, Anniston Alabama (Continued)**

Site ID	Field Sample Number	T24A-D02 SAIC01 CREEK 01894 0	T24A-S03 SAIC02 EXCV 5/24/94 5.5	T24A-S03 SAIC02 EXCV 5/24/94 5.5	T24A-S04 SAIC01 EXCV 5/24/94 5.5	T24A-S04 SAIC02 EXCV 5/24/94 5.5
<b>Associated Field QC Sample - Site ID</b>						
Associated Field QC Sample - Field Sample No.						
Associated Field QC Sample - Site ID						
Associated Field QC Sample - Field Sample No.						
1,3-Dichloropropane	μg/g	0.2	LT	0.2**	LT	0.2**
1,3-Dimethylbenzene	μg/g	0.23	LT	0.23**	LT	0.23**
2-Chloroethylvinyl Ether	μg/g	0.5	LT	0.5**	LT	0.5**
Acetone	μg/g	3.3	LT	3.3**	LT	3.3**
Acrylonitrile	μg/g	2	LT	2**	LT	2**
Bromodichloromethane	μg/g	0.2	LT	0.2**	LT	0.2**
Vinyl Chloride	μg/g	1.8	LT	1.8**	LT	1.8**
Chloroethane	μg/g	0.84	LT	0.84**	LT	0.84**
Benzene	μg/g	0.1	LT	0.1**	LT	0.1**
Trichlorofluoromethane	μg/g	0.23	LT	0.23**	LT	0.23**
Carbon Tetrachloride	μg/g	0.31	LT	0.31**	LT	0.31**
Methylene Chloride	μg/g	4.4	LT	4.4**	LT	4.4**
Bromoform	μg/g	0.26	LT	0.28**	LT	0.28**
Chloromethane	μg/g	0.96	LT	0.98**	LT	0.98**
Bromoform	μg/g	0.2	LT	0.2**	LT	0.2**
Chlorobenzene	μg/g	0.24	LT	0.24**	LT	0.24**
Dibromochloromethane	μg/g	0.1	LT	0.1**	LT	0.1**
Ethylbenzene	μg/g	0.25	LT	0.25**	LT	0.25**
Toluene	μg/g	0.19	LT	0.19**	LT	0.19**
Methylisobutylketone	μg/g	0.1	LT	0.1**	LT	0.1**
Methylisobutylketone	μg/g	4.3	LT	4.3**	LT	4.3**
1,1,2,2-Tetrachloroethane	μg/g	0.63	LT	0.63**	LT	0.63**
Tetrachloroethene	μg/g	0.2	LT	0.2**	LT	0.2**
Trichloroethene	μg/g	0.16	LT	0.16**	LT	0.16**
1,2-Dimethylbenzene	μg/g	0.23	LT	0.23**	LT	0.23**
TICs	μg/g	0.78	LT	0.78**	LT	0.78**
		9 (22.0)		9 (22.0)	10 (37.6)	7 (12.2)
<b>SEMIVOLATILE SOIL/QCMS (ppq/g)</b>						
Laboratory ID Number	Parameter	Units	CRL	UB041170	UB03199	UB03200
1,2,3-Trichlorobenzene	μg/g	0.032	LT	0.032**	LT	0.032**
1,2,4-Trichlorobenzene	μg/g	0.22	LT	0.22**	LT	0.22**
1,2-Dichlorobenzene	μg/g	0.042	LT	4**	LT	0.042**
1,2-Diphenylhydrazine	μg/g	0.52	LT	0.52**	LT	0.52**
1,3-Dichlorobenzene	μg/g	0.042	LT	0.042**	LT	4**
1,4-Dichlorobenzene	μg/g	0.034	LT	0.034**	LT	3**
2,3,6-Trichlorophenol	μg/g	0.62	LT	0.62**	LT	0.62**
2,4,6-Trichlorophenol	μg/g	0.49	LT	0.48**	LT	50**
2,4-Dichlorophenol	μg/g	0.061	LT	0.061**	LT	6**
2,4-Dichlorophenol	μg/g	0.085	LT	0.085**	LT	8**
2,4-Dimethylphenol	μg/g	3	LT	3**	LT	3**
2,4-Dinitrophenol	μg/g	4.7	LT	4.7**	LT	4.7**

**Table G-4. Data Summary Table: Soil/Sediment - Area T-24A Chemical Munitions Disposal Training Area, Fort McClellan, Anniston Alabama (Continued)**

Site ID	Field Sample Number	T24A-S02	T24A-S03	T24A-S03	T24A-S04	
	Site Type	SAIC01	SAIC01	SAIC02	SAIC02	
	Collection Date	CREK	EXCV	EXCV	EXCV	
Depth (ft)		8/19/94	5/24/94	5/24/94	5/24/94	
Associated Field QC Sample - Site ID		0	5.5	5.5	5.5	
Associated Field QC Sample - Site ID						
Associated Field QC Sample - Site ID						
Associated Field QC Sample - Site ID						
2,8-Dinitroaniline	199/0	0.57	LT	0.57**	LT	0.57**
2-Chlorophenol	199/0	0.055	LT	0.055**	LT	0.055**
2-Chloronaphthalene	199/0	0.24	LT	0.24**	LT	0.24**
2-Methylnaphthalene	199/0	0.032	LT	0.032**	LT	0.032**
2-Methyl Phenol	199/0	0.098	LT	0.098**	LT	0.098**
2-Nitrophenol	199/0	1.1	LT	1.1**	LT	1.1**
3,3'-Dichlorobenzidine	199/0	1.6	LT	1.6**	LT	1.6**
3,5-Dinitro-aniline	199/0	1.6	LT	1.6**	LT	1.6**
3-Nitroaniline	199/0	3	LT	3**	LT	3**
3-Nitrotoluene	199/0	0.34	LT	0.34**	LT	0.34**
4,6-Dinitro-2-cresol	199/0	0.8	LT	0.8**	LT	0.8**
4-Bromophenyl Phenyl Ether	199/0	0.041	LT	0.041**	LT	0.041**
4-Chloro-3-methylphenol	199/0	0.93	LT	0.93**	LT	0.93**
4-Chlorophenyl Phenyl Ether	199/0	0.17	LT	0.17**	LT	0.17**
4-Methyl Phenol	199/0	0.24	LT	0.24**	LT	0.24**
4-Nitrophenol	199/0	3.3	LT	3.3**	LT	3.3**
Acanaphthene	199/0	0.041	LT	0.041**	LT	0.041**
Acanaphthylene	199/0	0.033	LT	0.033**	LT	0.033**
Anthracene	199/0	0.71	LT	0.71**	LT	0.71**
Atrazine	199/0	0.065	LT	0.065**	LT	0.065**
bis[2(Chlorooxy) Methane	199/0	0.19	LT	0.19**	LT	0.19**
bis[2(Chloroisopropyl) Ether	199/0	0.44	LT	0.44**	LT	0.44**
bis[2-Chloroethyl]ether	199/0	0.36	LT	0.36**	LT	0.36**
bis[2(Ethyl)phthalate	199/0	0.48	LT	0.48**	LT	0.48**
Benzofuran	199/0	0.041	LT	0.041**	LT	0.041**
Benzofuran	199/0	1.2	LT	1.2**	LT	1.2**
Benzofuran	199/0	0.31	LT	0.31**	LT	0.31**
Benzofuran	199/0	1.8	LT	1.8**	LT	1.8**
Benzofuran	199/0	0.18	LT	0.18**	LT	0.18**
Benzofuran	199/0	0.13	LT	0.13**	LT	0.13**
Benzyl Alcohol	199/0	0.032	LT	0.032**	LT	0.032**
Chrysene	199/0	0.032	LT	0.032**	LT	0.032**
Hexachlorobenzene	199/0	0.8	LT	0.08**	LT	0.08**
Hexachlorocyclohexadiene	199/0	0.52	LT	0.52**	LT	0.52**
Hexachloroethane	199/0	1.6	LT	1.6**	LT	1.6**
Dibenzofuran	199/0	0.31	LT	0.31**	LT	0.31**
Dibromoethane	199/0	0.071	LT	0.071**	LT	0.071**
Dibromochloropropane	199/0	0.038	LT	0.038**	LT	0.038**
Dibenzofuran	199/0	0.57	LT	0.57**	LT	0.57**
Dicycloparaffine	199/0	0.068	LT	0.068**	LT	0.068**
Vapone	199/0	0.24	LT	0.24**	LT	0.24**
Diethyl Phthalate	199/0	0.063	LT	0.063**	LT	0.063**
d <i>l</i> -N-Buyl Phthalate	199/0	1.3	LT	1.3**	LT	1.3**
d <i>l</i> -N-Octyl Phthalate	199/0	0.23	LT	0.23**	LT	0.23**

**Table G-4. Data Summary Table: Soil/Sediment - Area T-24A Chemical Munitions Disposal Training Area, Fort McClellan, Anniston Alabama (Continued)**

Site ID	Field Sample Number	T24A-S02	T24A-S03	T24A-S04
Site Type	SAIC01	SAIC01	SAIC01	SAIC02
Collection Date	CREK 6/19/94	EXCV 5/24/94	EXCV 5/24/94	EXCV 5/24/94
Depth (ft)	0	5.6	5.5	5.5
Associated Field QC Sample - Site ID				
Associated Field QC Sample - Field Sample No.				
Associated Field QC Sample - Site ID				
Associated Field QC Sample - Field Sample No.				
Endrin Aldehyde	1.8	LT	200**	LT
Endosulfan Sulfate	1.2	LT	100**	LT
Fluorene	0.032	LT	3**	LT
Fluorene	0.065	LT	6**	LT
Hexachlorobutadiene	0.07	LT	100**	LT
Isodurene(1,2,3-copolyrene	2.4	LT	200**	LT
Isophorone	0.39	LT	40**	LT
Mirex	0.14	LT	10**	LT
Melalylon	0.18	LT	20**	LT
Naphthalene	0.74	LT	70**	LT
Naphthalene	1.8	LT	200**	LT
Nitrobenzene	0.46	LT	50**	LT
N-Nitroso-di-N-propylamine	1.1	LT	100**	LT
N-Nitrosodiphenylamine	0.29	LT	30**	LT
Pentachlorophenol	0.76	LT	80**	LT
Phenanthrene	0.032	LT	20**	LT
Phenol	0.052	LT	6**	LT
Parathion	1.7	LT	200**	LT
Pyrene	0.083	LT	8**	LT
Supone	0.92	LT	90**	LT
TTCs	14 (20.8)		34 (192.9)	32 (1720.9)
				124 (214.9)
				117 (637.9)
PESTICIDES/SOIL/GCEC ( $\mu\text{g/g}$ )				
Laboratory ID Number				
Parameter	Units	CRL	Units	Units
Aliphatic BHC	ppb	0.0028	ppb	ppb
Endosulfan I	ppb	0.001	ppb	ppb
Aldrin	ppb	0.0014	ppb	ppb
Heptachlor	ppb	0.0077	ppb	ppb
Endosulfan II	ppb	0.0007	ppb	ppb
Chlordane	ppb	0.0684	ppb	ppb
delta-BHC	ppb	0.0085	ppb	ppb
Dieldrin	ppb	0.0016	ppb	ppb
Endrin	ppb	0.0065	ppb	ppb
Heptachlor	ppb	0.0022	ppb	ppb
Heptachlor Epoxide	ppb	0.0013	ppb	ppb
Isodin	ppb	0.003	ppb	ppb
Lindane	ppb	0.001	ppb	ppb
Methoxychlor	ppb	0.0359	ppb	ppb
PCB-1016	ppb	0.1	ppb	ppb
PCB-1260	ppb	0.0479	ppb	ppb
1,1-Dichloro-2-bis(p-chloro	ppb	0.0027	ppb	ppb
2,2-bis(p-Chlorophenyl)-1,1-di	ppb	0.0027	ppb	ppb

**Table G-4. Data Summary Table: Soil/Sediment - Area T-24A Chemical Munitions Disposal Training Area, Fort McClellan, Anniston Alabama (Continued)**

Site ID	Field Sample Number	T24A-D02	T24A-S03	T24A-S03	T24A-S04
Site Type	SAC01	SAC01	SAC02	SAC02	SAIC02
Collection Date	CREK	EXCV	EXCV	EXCV	EXCV
Daph (H)	0/19/04	5/24/04	5/24/04	5/24/04	5/24/04
Associated Field QC Sample - Site ID	0	5.5	5.5	5.5	5.5
Associated Field QC Sample - Field Sample No.					
Associated Field QC Sample - Site ID					
Associated Field QC Sample - Field Sample No.					
2,2-bis(p-Chlorophenyl)1,1,1-Toxaphene	µg/g	0.0035	N/A	N/A	N/A
	µg/g	0.226	N/A	N/A	N/A
<b>EXPLOSIVES/SOIL/HPLC (µg/g)</b>					
Laboratory ID Number		UB04170	UB03199	UB03200	UB03201
Parameter	Units	CRL			
1,3,5-Trinitrobenzene	µg/g	0.922	LT	0.922**	?
1,3-Dinitrobenzene	µg/g	0.504	LT	0.604**	?
2,4,6-Trinitrotoluene	µg/g	2	LT	2**	?
2,4-Dinitrotoluene	µg/g	2.5	LT	2.5**	?
2,6-Dinitrotoluene	µg/g	2	LT	2**	?
Cyclohexa(methylenetetra)nitria	µg/g	2	LT	5.8** UQ	?
Nitrobenzene	µg/g	1.14	LT	1.14**	?
Hexahydro-1,3,5-trinitro-1,3,5-Methyl-N-(2,4,6-tetranitroan	µg/g	1.28	LT	1.28**	?
	2.11	LT	2.11**	?	?
NG and PETN/SOIL/HPLC (µg/g)					
Laboratory ID Number		UB04170	UB03199	UB03200	UB03201
Parameter	Units	CRL			
Nitrocarine	µg/g	0.51	LT	0.54**	?
Pentaerythritol tetranitrate	µg/g	1	LT	1**	?
<b>ORGANOSULFURS/SOIL/GCFP (µg/g)</b>					
Laboratory ID Number		MCBS'17	MCBS'21	MCBS'22	MCBS'23
Parameter	Units	CRL			
Benzothiazole	µg/g	1.08	LT	1.08**	LT
p-Chlorophenylmethyl sulfide	µg/g	1.08	LT	1.08**	LT
p-Chlorophenylmethyl sulfoxide	µg/g	2.25	LT	2.25**	LT
p-Chlorophenylmethyl sulfone	µg/g	2.37	LT	2.37**	LT
Dithiene	µg/g	1.47	LT	1.47**	LT
Dimethyl disulfide	µg/g	0.692	LT	0.692**	LT
1,4-Oxathiane	µg/g	0.856	LT	0.856**	LT
<b>IMPA/FC24/SOIL (µg/g)</b>					
Laboratory ID Number		MCBS'17	MCBS'21	MCBS'22	MCBS'23
Parameter	Units	CRL			
Chlorosaccharic acid	µg/g	0.5	LT	0.5**	LT
Isopropyl methylphosphonate	µg/g	0.5	LT	0.5**	LT
Methylphosphonic acid	µg/g	0.5	LT	0.5**	LT

**Table G-4. Data Summary Table: Soil/Sediment - Area T-24A Chemical Munitions Disposal Training Area, Fort McClellan, Anniston Alabama (Continued)**

Site ID	T24A-D02	T24A-S03	T24A-S04
Field Sample Number	SAC01	SAIC02	SAIC02
Site Type	CREK	EXCV	EXCV
Collection Date	01/19/94	5/24/94	5/24/94
Depth (ft)	0	5.5	5.5
Associated Field QC Sample - Site ID			
Associated Field QC Sample - Field Sample No.			
Associated Field QC Sample - Site ID			
Associated Field QC Sample - Field Sample No.			
<b>AGENT/PROPS/SOIL/HPLC (<math>\mu\text{g/g}</math>)</b>			
Laboratory ID Number	MCB8'17	MCB8'21	MCB8'23
Parameter	Units	CRL	MCB8'24
Chloroacetic acid	$\mu\text{g/g}$	18	LT
Tridiglycerol	$\mu\text{g/g}$	3.94	LT
		0.5**	0.5**
		LT	LT
		3.94**	3.94**
		LT	LT
		3.84** D	0.5** D
		LT	LT
		3.84** D	3.94** D
<b>ORGANOPHOSPHORUS/SOIL/GCFF (<math>\mu\text{g/g}</math>)</b>			
Laboratory ID Number	MCBS'17	MCBS'21	MCBS'23
Parameter	Units	CRL	MCBS'24
Diisopropyl methylphosphonate	$\mu\text{g/g}$	0.114	LT
Dimethyl methylphosphonate	$\mu\text{g/g}$	0.133	LT
		0.114**	0.114**
		LT	LT
		0.133**	0.133**
		LT	LT
		0.133** D	0.133** D
		LT	LT
		0.114** D	0.114** D
		LT	LT
		0.133** D	0.133** D
		LT	LT
		0.114** D	0.114** D
		LT	LT

**Table G-4. Data Summary Table: Soil/Sediment - Area T-24A Chemical Munitions Disposal Training Area,  
Fort McClellan, Anniston Alabama (Continued)**

Site ID	Field Sample Number				T24A-S05	SAC01		
Site Type					EXCV			
Collection Date					5/27/94			
Depth (ft)					5			
Associated Field QC Sample - Site ID								
Associated Field QC Sample - Field Sample No.								
Associated Field QC Sample - Site ID								
Associated Field QC Sample - Field Sample No.								
Associated Field QC Sample - Site ID								
Associated Field QC Sample - Field Sample No.								
<b>METALS/SOIL (µg/g)</b>								
Laboratory ID Number	Parameter	Units	CRL		UB03310			
Mercury	ppb	0.05	LT	0.05**				
Antimony	ppb	3	LT	29.1**				
Arsenic	ppb	2.5	LT	6.73**				
Lead	ppb	0.467	LT	33**				
Selenium	ppb	0.449	LT	0.449**				
Silver	ppb	0.803	LT	0.803**				
Aluminum	ppb	11.2	LT	19700**				
Boron	ppb	6.84	LT	6.64**				
Barium	ppb	3.29	LT	103**				
Beryllium	ppb	0.427	LT	0.902**				
Calcium	ppb	25.3	LT	2200**				
Cadmium	ppb	1.2	LT					
Cobalt	ppb	2.5	LT	9.04**				
Chromium	ppb	1.04	LT	21**				
Copper	ppb	2.84	LT	34.9**				
Iron	ppb	6.66	LT	63200**				
Potassium	ppb	131	LT	2840**				
Magnesium	ppb	10.1	LT	716**				
Manganese	ppb	9.87	LT	179**				
Molybdenum	ppb	14.3	LT	14.3**				
Sodium	ppb	38.7	LT	61.8**				
Nickel	ppb	2.74	LT	8.06**				
Tin	ppb	7.43	LT	7.43**				
Tellurium	ppb	14.9	LT	14.9**				
Thallium	ppb	34.3	LT	34.3**	JR			
Vanadium	ppb	1.14	LT	18.5**				
Zinc	ppb	2.34	LT	76.4**				
<b>VOLATILES/SOIL/GC/MS (µg/g)</b>								
Laboratory ID Number	Parameter	Units	CRL		UB03310			
1,1,1-Trichloroethane	ppb	0.2	LT	0.2**				
1,1,2-Trichloroethane	ppb	0.33	LT	0.33**				
1,1-Dichloroethene	ppb	0.27	LT	0.27**				
1,1-Dichloroethane	ppb	0.48	LT	0.48**				
1,2-Dichloroethene	ppb	0.32	LT	0.32**				
1,2-Dichloroethane	ppb	0.32	LT	0.32**				
1,2-Dichloropropane	ppb	0.53	LT	0.53**				
1,3-Dichlorobenzene	ppb	0.14	LT	0.14**				

**Table G-4. Data Summary Table: Soil/Sediment - Area T-24A Chemical Munitions Disposal Training Area,  
Fort McClellan, Anniston Alabama (Continued)**

Site ID	Field Sample Number	T24A-S05 SAIC01 EXCY 5/27/94
Site Type		
Collection Date		5
Depth (ft.)		
Associated Field QC Sample - Site ID		
Associated Field QC Sample - Field Sample No.		
Associated Field QC Sample - Site ID		
Associated Field QC Sample - Field Sample No.		
1,3-Dichloropropane	Hg10	0.2
1,3-Dimethylbenzene	Hg10	0.23
2-Chloroethylvinyl Ether	Hg10	0.5
Acetone	Hg10	3.3
Acrylonitrile	Hg10	2
Bromodichloromethane	Hg10	0.2
Vinyl Chloride	Hg10	1.8
Chloroethane	Hg10	0.84
Benzene	Hg10	0.1
Trichlorofluoromethane	Hg10	0.23
Carbon Tetrachloride	Hg10	0.31
Methylene Chloride	Hg10	4.4
Bromomethane	Hg10	0.26
Chloromethane	Hg10	0.98
Bromoform	Hg10	0.2
Chloroform	Hg10	0.24
Chlorobenzene	Hg10	0.1
Dibromochloromethane	Hg10	0.26
Ethylbenzene	Hg10	0.18
Toluene	Hg10	0.1
Methylmethionine	Hg10	4.3
Methylisobutylketone	Hg10	0.63
1,1,2,2-Tetrachloroethane	Hg10	0.2
Tetrachloroethene	Hg10	0.16
Trichloroethene	Hg10	0.23
1,2-Dimethylbenzene	Hg10	0.78
TICs	Hg10	24 (70.7)
<b>SEMIVOLATILE &amp; SOIL/GC/MS (<math>\mu\text{g/g}</math>)</b>		
Laboratory ID Number	Units	UBL3310
Parameter	CRL	
1,2,3-Trichlorobenzene	Hg10	0.032
1,2,4-Trichlorobenzene	Hg10	0.22
1,2-Dichlorobenzene	Hg10	0.042
1,2-Diphenylhydrazine	Hg10	0.52
1,3-Dichlorobenzene	Hg10	0.042
1,4-Dichlorobenzene	Hg10	0.034
2,3,6-Trichlorophenol	Hg10	0.62
2,4,5-Trichlorophenol	Hg10	0.49
2,4,6-Trichlorophenol	Hg10	0.061
2,4-Dichlorophenol	Hg10	0.085
2,4-Dimethylphenol	Hg10	3
2,4-Dinitrophenol	Hg10	4.7

**Table G-4. Data Summary Table: Soil/Sediment - Area T-24A Chemical Munitions Disposal Training Area,  
Fort McClellan, Anniston Alabama (Continued)**

Site ID	Field Sample Number	Site Type	Collection Date	Depth (ft)	Associated Field QC Sample - Site ID	Associated Field QC Sample - Site ID	Associated Field QC Sample - Site ID	T24A-S05 SAIC01 EXCV 5/27/94 5
	2,6-Dinitroaniline				1970	0.37	LT	6**
	2-Chlorophenol				1970	0.055	LT	0.6**
	2-Chloronaphthalene				1970	0.24	LT	2**
	2-Methylnaphthalene				1970	0.032	LT	10**
	2-Methyl Phenol				1970	0.098	LT	1**
	2-Nitrophenol				1970	1.1	LT	10**
	3,3'-Dichlorobenzidine				1970	1.6	LT	20**
	3,5-Dinitro-aniline				1970	1.6	LT	20**
	3-Nitroaniline				1970	3	LT	30**
	3-Nitrotoluene				1970	0.34	LT	3**
	4,6-Dinitro-2-cresol				1970	0.8	LT	8**
	4-Bromophenyl Phenyl Ether				1970	0.041	LT	0.4**
	4-Chloro-3-methylphenol				1970	0.93	LT	9**
	4-Chlorophenyl Phenyl Ether				1970	0.17	LT	2**
	4-Methyl Phenol				1970	0.24	LT	2**
	4-Nitrophenol				1970	3.3	LT	30**
	Acenaphthene				1970	0.041	LT	0.4**
	Acenaphthylene				1970	0.033	LT	0.3**
	Anthracene				1970	0.71	LT	7**
	Aurazine				1970	0.19	LT	0.6**
	bis(2-Chloroethyl) Methane				1970	0.44	LT	4**
	bis(2-Chloroethylpropyl) Ether				1970	0.38	LT	4**
	bis(2-Ethylhexyl)phthalate				1970	0.48	LT	8**
	Benzofluorancane				1970	0.041	LT	0.4**
	Benzol(e)pyrene				1970	1.2	LT	10**
	Benzol(b)fluoranthene				1970	0.31	LT	3**
	Butyl Benzyl Phthalate				1970	1.8	LT	20**
	Benzol(g,h,i)perylene				1970	0.18	LT	2**
	Benzol(k)fluoranthene				1970	0.13	LT	1**
	Benzyl Alcohol				1970	0.032	LT	0.3**
	Chrysene				1970	0.032	LT	0.3**
	Hexachlorobenzene				1970	0.6	LT	0.8**
	Hexachlorocyclopentadiene				1970	0.52	LT	5**
	Hexachloroethane				1970	1.8	LT	20**
	Dibenz(a,h)anthracene				1970	0.31	LT	3**
	Dibromochloropropane				1970	0.071	LT	0.7**
	Dibenzofuran				1970	0.038	LT	4**
	Dicyclopentadiene				1970	0.57	LT	8**
	Vapona				1970	0.069	LT	0.7**
	Diehtyl Phthalate				1970	0.24	LT	2**
	Dimethyl Phthalate				1970	0.063	LT	0.6**
	d,N-Butyl Phthalate				1970	1.3	LT	10**
	di-N-Octyl Phthalate				1970	0.23	LT	2**

**Table G-4. Data Summary Table: Soil/Sediment - Area T-24A Chemical Munitions Disposal Training Area,  
Fort McClellan, Anniston Alabama (Continued)**

Site ID	Field Sample Number	T24A-S05 SAIC01 EXCV 5/27/04
Site Type		
Collection Date		
Depth (ft)		5
Associated Field QC Sample - Site ID		
Associated Field QC Sample - Field Sample No.		
Associated Field QC Sample - Site ID		
Associated Field QC Sample - Field Sample No.		
Endrin Aldehyde	1.8	LT
Endosulfan Sulfate	1.2	LT
Fluoranthene	0.032	LT
Fluorene	0.085	2*
Hexachlorobutadiene	0.97	LT
Indeno(1,2,3-cd)pyrene	2.4	LT
Isophorone	0.39	LT
Mirex	0.14	LT
Methionine	0.18	LT
Naphthalene	0.74	LT
Nitrobenzene	1.8	LT
N-Nitrosodimethylamine	0.46	LT
N-Nitroso-di-N-propylamine	1.1	LT
N-Nitrosodiphenylamine	0.29	LT
Pentachlorophenol	0.76	LT
Phenanthrene	0.032	3*
Phenol	0.052	LT
Parathion	1.7	LT
Pyrene	0.083	LT
Supona	0.92	LT
TICs	64 (633.0)	
<b>PESTICIDES/SOIL/GCEC (µg/g)</b>		
Laboratory ID Number	Units	CRL
Parathion		N/A
alpha-BHC	µg/g	0.0028
Endosulfan I	µg/g	0.001
Aldrin	µg/g	0.0014
beta-BHC	µg/g	0.0077
Endosulfan II	µg/g	0.0007
Chlordane	µg/g	0.0684
delta-BHC	µg/g	0.0085
Dieldrin	µg/g	0.0016
Endrin	µg/g	0.0085
Heptachlor	µg/g	0.0022
Heptachlor Epoxide	µg/g	0.0013
Isourin	µg/g	0.003
Lindane	µg/g	0.001
Methoxychlor	µg/g	0.0359
PCB-1016	µg/g	0.1
PCB-1260	µg/g	0.0479
1,1-Dichloro-2,2-bis(p-chlorophenyl)1,1-dl-2,2-bis(p-Chlorophenyl))1,1-dl-	µg/g	0.0027

**Table G-4. Data Summary Table: Soil/Sediment - Area T-24A Chemical Munitions Disposal Training Area,  
Fort McClellan, Anniston Alabama (Continued)**

Site ID	T24A-S05	
Field Sample Number	SAIC01	
Site Type	EXCV	
Collection Date	5/27/94	
Depth (ft)	5	
Associated Field QC Sample - Site ID		
Associated Field QC Sample - Field Sample No.		
Associated Field QC Sample - Site ID		
Associated Field QC Sample - Field Sample No.		
2,2-bis(p-Chlorophenyl)1,1,-Toxaphene	µg/g      0.0035 µg/g      0.226	N/A N/A
<b>EXPLOSIVES/SOIL/HPLC (µg/g)</b>		
Laboratory ID Number	UB03310	
Parameter	Units CRL	
1,3,5-Trinitrobenzene	µg/g 0.922 LT 0.922** 7 J	
1,3-Dinitrobenzene	µg/g 0.504 LT 0.504**	
2,4,6-Trikrotoluene	µg/g 2 LT 2**	
2,4-Dinitrotoluene	µg/g 2.6 LT 2.6**	
2,6-Dinitrotoluene	µg/g 2 LT 2**	
Cyclohexemethyleneketanitra	µg/g 2 LT 2**	
Nitrobenzene	µg/g 1.14 LT 1.14**	
Hexahydro-1,3,5-trinitro-1,3,N-Methyl-N-(2,4,6-tetranitro	µg/g 1.28 LT 1.28** H 1	
1,4-Oxathiane	µg/g 2.11 LT 2.11**	
<b>NG and PETN/SOIL/HPLC (µg/g)</b>		
Laboratory ID Number	UB03310	
Parameter	Units CRL	
Nitroglycerine	µg/g 0.51 LT 0.51**	
Pentaerythritol tetranitrate	µg/g 1 LT 1** 7 J	
<b>ORGANOSULFURS/SOIL/GCFF (µg/g)</b>		
Laboratory ID Number	MCBS'25	
Parameter	Units CRL	
Benzothiazole	µg/g 1.08 LT 1.08**	
p-Chlorophenyl(methyl) sulfide	µg/g 1.08 LT 1.08**	
p-Chlorophenyl(methyl) sulfide	µg/g 2.25 LT 2.25**	
p-Chlorophenyl(methyl) sulfone	µg/g 2.37 LT 2.37**	
Dithiane	µg/g 1.47 LT 1.47**	
Dimethyl disulfide	µg/g 0.692 LT 0.692**	
1,4-Oxathiane	µg/g 0.856 LT 0.856**	
<b>IMPA/FC2A/SOIL (µg/g)</b>		
Laboratory ID Number	MCBS'25	
Parameter	Units CRL	
Chloroacetic acid	µg/g 0.5 LT 0.5**	
Isopropyl methylphosphonate	µg/g 0.5 LT 0.5**	
Methylphosphonic acid	µg/g 0.6 LT 0.6**	

**Table G-4. Data Summary Table: Soil/Sediment - Area T-24A Chemical Munitions Disposal Training Area,  
Fort McClellan, Anniston Alabama (Continued)**

Site ID	T24A-S05
Field Sample Number	SAIC01
Site Type	EXCV
Collection Date	5/27/94
Depth (ft)	5
Associated Field QC Sample - Site ID	
Associated Field QC Sample - Field Sample No.	
Associated Field QC Sample - Site ID	
Associated Field QC Sample - Field Sample No.	
<b>AGENT PRODS/SOIL/HPLC (µg/g)</b>	
Laboratory ID Number	MCBS'26
Parameter	Units CRL
Chloracetic acid	µg/g 18 LT 0.5**
Thiodiglycol	µg/g 3.94 LT 3.94**
<b>ORGANOPHOSPHOROUS/GCFF (µg/g)</b>	
Laboratory ID Number	MCBS'26
Parameter	Units CRL
Diisopropyl methylphosphonate	µg/g 0.114 LT 0.114**
Dimethyl methylphosphonate	µg/g 0.133 LT 0.133**

**Footnotes:**

- \* - Data collected from chemical transfer file (Phase I)
- \*\* - Data collected from AEC Pyramid system (Phase III)
- CRL - Certified reporting limits
- ID - Identification
- N/A - Not applicable
- N/F - Analysis requested, not yet received
- QC - Quality control
- TICs - Tentatively identified Compound : number of TICs (total value)
- Booleans Codes
- L.T - Less than the certified reporting limit / method detection level
- Flagging Codes
- D - Duplicate analysis
- P - Peak of interest
- Q - Sample inference obscured peak of interest
- U - Analysis is unconfirmed
- Data Qualifiers
- ? - Control chart not yet approved by USAEC.
- I - The low-spike recovery is high.
- J - The low-spike recovery is low.

**Table G-5. Data Summary Table: Groundwater/Surface Water - Area T-24A Chemical Munitions Disposal Training Area,  
Fort McClellan, Anniston Alabama**

Site ID	T24A-G01	T24A-G01	T24A-G01	T24A-G02
Field Sample Number	SAIC01	SAIC03	SAIC04	SAIC04
Site Type	WELL	WELL	WELL	WELL
Collection Date	10/23/94	2/19/95	2/19/95	4/24/95
Depth (ft)	50	50.39	50.39	23.47
Associated Field QC Sample - Site ID				
Associated Field QC Sample - Field Sample No.				
Associated Field QC Sample - Site ID				
Associated Field QC Sample - Field Sample No.				
<b>METALS/WATER (<math>\mu\text{g/L}</math>)</b>				
Laboratory ID Number	Units	CRL	UB08049	UC00382
Parameter				UC00383
Antimony	ug/L	3	LT	6**
Arsenic	ug/L	2.35	LT	2.35**
Lead	ug/L	4.47	LT	4.47**
Selenium	ug/L	2.53	LT	2.53**
Thallium	ug/L	1	LT	6**
Mercury	ug/L	0.1	LT	3.99**
Silver	ug/L	10	LT	0.1**
Aluminum	ug/L	112	4180**	165** D
Boron	ug/L	230	LT	230** D
Berium	ug/L	2.82	LT	66**
Beryllium	ug/L	1.12	LT	62.2** D
Cadmium	ug/L	4	LT	1.12**
Calcium	ug/L	105	6110**	1.63** D
Cobalt	ug/L	26	LT	2120**
Copper	ug/L	18.8	LT	25** D
Chromium	ug/L	18.8	LT	18.8** D
Iron	ug/L	77.5	2330**	16.8** D
Potassium	ug/L	1240	3880**	9410** D
Magnesium	ug/L	135	11700**	8860** D
Manganese	ug/L	9.87	1650**	10400** D
Molybdenum	ug/L	52.7	LT	1130** D
Sodium	ug/L	279	1860**	3380**
Nickel	ug/L	32.1	LT	52.7** D
Tin	ug/L	69.9	LT	3300** D
Tellurium	ug/L	118	LT	32.1** D
Vanadium	ug/L	27.6	LT	58.9** D
Zinc	ug/L	18	LT	118** D
<b>VOLATILES/WATER (<math>\mu\text{g/L}</math>)</b>				
Laboratory ID Number	Units	CRL	UB08049	UC00382
Parameter				UC00383
1,1,1-Trichloroethane	ug/L	1	LT	6** D
1,1,2-Trichloroethane	ug/L	1	LT	5** D
1,1-Dichloroethene	ug/L	1	LT	6** D
1,1-Dichloroethane	ug/L	1	LT	5** D
1,2-Dichloroethene	ug/L	5	LT	20** D
1,2-Dichloroethane	ug/L	1	LT	5** D
1,2-Dichloropropane	ug/L	1	LT	5** D
1,3-Dichlorobenzene	ug/L	1	LT	6** D

**Table G-5. Data Summary Table: Groundwater/Surface Water - Area T-24A Chemical Munitions Disposal Training Area, Fort McClellan, Anniston Alabama (Continued)**

**Table G-5. Data Summary Table: Groundwater/Surface Water - Area T-24A Chemical Munitions Disposal Training Area,  
Fort McClellan, Anniston Alabama (Continued)**

Site ID	Field Sample Number	T24A-G01 SAIC01 WELL 102384 50	T24A-G01 SAIC03 WELL 2/1/95 50.39	T24A-G01 SAIC04 WELL 2/1/95 50.39	T24A-G02 SAIC03 WELL 2/1/95 23.47	
Associated Field QC Sample - Site ID						
Associated Field QC Sample - Field Sample No.						
Associated Field QC Sample - Site ID						
Associated Field QC Sample - Field Sample No.						
2,6-Dinitroaniline	µg/L	8.8	LT	8.8**	LT	8.8**
2-Chlorophenol	µg/L	2.9	LT	2.8**	LT	2.8**
2-Chloronaphthalene	µg/L	2.6	LT	2.6**	LT	2.6**
2-Methylnaphthalene	µg/L	1.3	LT	1.3**	LT	1.3**
2-Methyl Phenol	µg/L	3.6	LT	3.8**	LT	3.6**
2-Nitrophenol	µg/L	8.2	LT	8.2**	LT	8.2**
3,3'-Dichlorobenzidine	µg/L	6	LT	5**	LT	5**
3,5-Dinitro-aniline	µg/L	21	LT	21**	LT	21**
3-Nitroaniline	µg/L	15	LT	15**	LT	15**
3-Nitrodiene	µg/L	2.9	LT	2.9**	LT	2.9**
4-Bromophenyl Phenyl Ether	µg/L	22	LT	22**	LT	22**
4-Chloro-3-methylphenol	µg/L	8.5	LT	8.5**	LT	8.5**
4-Chlorophenyl Phenyl Ether	µg/L	23	LT	23**	LT	23**
4-Methyl Phenol	µg/L	2.8	LT	2.8**	LT	2.8**
4-Nitrophenol	µg/L	96	LT	96**	LT	96**
Acensphthalene	µg/L	5.8	LT	5.8**	LT	5.8**
Acenaphthylene	µg/L	5.1	LT	5.1**	LT	5.1**
Anthracene	µg/L	5.2	LT	5.2**	LT	5.2**
Avrazine	µg/L	6.9	LT	5.9**	LT	5.9**
bis(2-Chloroethoxy) Methane	µg/L	6.8	LT	6.8**	LT	6.8**
bis(2-Chloroisopropyl) Ether	µg/L	5	LT	5**	LT	5**
bis(2-Chloroethyl)ether	µg/L	0.68	LT	0.68**	LT	0.68**
bis(2-Ethyhexyl)phthalate	µg/L	7.7	LT	19**	LT	7.7**
Bis(Butyl Phthalate)	µg/L	28	LT	28**	LT	28**
Benz(a,h,)perylene	µg/L	15	LT	15**	LT	15**
Bromoform	µg/L	2.9	LT	2.9**	LT	2.9**
Benzyl Alcohol	µg/L	4	LT	4**	LT	4**
Hexachloroethane	µg/L	8.3	LT	8.3**	LT	8.3**
Dibromochloropropane	µg/L	12	LT	12**	LT	12**
Dibenzofuran	µg/L	5.1	LT	5.1**	LT	5.1**
Dicyclopentadiene	µg/L	6.5	LT	6.5**	LT	6.5**
Vapona	µg/L	6.5	LT	6.5**	LT	6.5**
Diethyl Phthalate	µg/L	5.9	LT	5.9**	LT	5.9**
Dimethyl Phthalate	µg/L	2.2	LT	2.2**	LT	2.2**
di-N-Butyl Phthalate	µg/L	33	LT	33**	LT	33**
di-N-Octyl Phthalate	µg/L	1.5	LT	1.5**	LT	1.5**
Endouffen Sulfide	µg/L	50	LT	50**	LT	50**
Fluoranthene	µg/L	24	LT	24**	LT	24**
Fluorene	µg/L	9.2	LT	9.2**	LT	9.2**
Hexachlorobutadiene	µg/L	8.7	LT	8.7**	LT	8.7**
Isophorone	µg/L	2.4	LT	2.4**	LT	2.4**
Millex	µg/L	24	LT	24**	LT	24**
Malathion	µg/L	21	LT	21**	LT	21**
Naphthalene	µg/L	0.5	LT	0.6**	LT	0.5**

**Table G-5. Data Summary Table: Groundwater/Surface Water - Area T-24A Chemical Munitions Disposal Training Area, Fort McClellan, Anniston Alabama (Continued)**

Site ID	Field Sample Number	T24A-G01	T24A-G01	T24A-G02
Site Type	SAIC01	SAIC03	SAIC04	SAIC04
Collection Date	WELL	WELL	WELL	WELL
Depth (ft)	10/23/94	2/1/95	2/1/95	4/24/95
Associated Field QC Sample - Site ID				
Associated Field QC Sample - Field Sample No.				
Associated Field QC Sample - Site ID				
Associated Field QC Sample - Field Sample No.				
Nitrobenzene	199.L	3.7	LT	3.7**
N-Nitrosodimethylamine	199.L	9.7	LT	9.7**
N-Nitroso-d-N-propylamine	199.L	6.8	LT	6.8**
N-Nitrosodiphenylamine	199.L	3.7	LT	3.7**
Phenanthrene	199.L	9.9	LT	9.9**
Phenol	199.L	2.2	LT	2.2**
Parathion	199.L	37	LT	37**
Pyrene	199.L	17	LT	17**
Suspna	199.L	19	LT	19**
Pentachlorophenol	199.L	1	LT	1**
Benz(a)pyrene	199.L	0.2	LT	0.020**
Benz(b)fluoranthene	199.L	0.2	LT	0.0402**
Benz(k)fluoranthene	199.L	0.2	LT	0.0193**
Chrysene	199.L	0.2	LT	0.0195**
Dibenz(a,h)anthracene	199.L	0.3	LT	0.0398**
Indeno(1,2,3-cd)pyrene	199.L	0.4	LT	0.0186**
Benz(a)anthracene	199.L	0.1	LT	0.0188**
TICs		4 (19.0)		1 (40.0)
				0 (0.0)
<i>PESTICIDES/WATER/GC/EC (µg/L)</i>				
Parameter	UB06049	UC00382	UC00383	UC00384
Units	CRL			
alpha-BHC	199.L	0.0025	LT	0.0026**
Endosulfan I	199.L	0.0025	LT	0.0025**
Aldrin	199.L	0.0074	M	0.0074**
beta-BHC	199.L	0.0089	LT	0.0089**
Endosulfan II	199.L	0.0077	LT	0.0077**
Chlordane	199.L	0.0312	LT	0.0312**
delta-BHC	199.L	0.0034	LT	0.0034**
Dieldrin	199.L	0.0074	LT	0.0074**
Ergofur	199.L	0.0178	LT	0.0178**
Ethofenphos	199.L	0.0504	LT	0.0504**
Hepachlor	199.L	0.0025	LT	0.0025**
Hepachlor Epoxide	199.L	0.0063	LT	0.0063**
Isodrin	199.L	0.0025	LT	0.0025**
Lindane	199.L	0.0025	LT	0.0025**
Methoxychlor	199.L	0.075*	LT	0.075**
PCB-1016	199.L	0.385	LT	0.385**
PCB-1260	199.L	0.176	LT	0.176**
4,4'-DDD	199.L	0.0061	LT	0.0061**
4,4'-DDE	199.L	0.0039	LT	0.0138** U
4,4'-DDT	199.L	0.0025	LT	0.0025** U
Toxaphene	199.L	1.64	LT	1.64** D

**Table G-5. Data Summary Table: Groundwater/Surface Water - Area T-24A Chemical Munitions Disposal Training Area,  
Fort McClellan, Anniston Alabama (Continued)**

Site ID	T24A-G01	T24A-G01	T24A-G01	T24A-G02
Field Sample Number	SAIC01	SAIC03	SAIC04	SAIC04
Site Type	WELL	WELL	WELL	WELL
Collection Date	10/21/94	2/1/95	2/1/95	4/24/95
Depth (ft)	50	50.39	50.39	23.47
Associated Field QC Sample - Site ID				
Associated Field QC Sample - Field Sample No.				
Associated Field QC Sample - Site ID				
Associated Field QC Sample - Field Sample No.				
<b>EXPLOSIVES/WATER/HPLC (ug/L)</b>				
Laboratory ID Number	Units	CRL	UB08049	UC00382
Parameter				UC00383
1,3,5-Trikrobenzene	ug/L	0.21	0.446** U	LT
1,3-Dikrobenzene	ug/L	0.458	LT	0.21** D
2,4,6-Trikrotoluene	ug/L	0.428	0.458**	LT
2,4-Dikrotoluene	ug/L	0.397	LT	0.428** D
2,6-Dikrotoluene	ug/L	0.6	0.397**	LT
Cyclohexatamethylbenzenetrinitra	ug/L	0.533	LT	0.6**
Nitrobenzene	ug/L	0.682	LT	0.533** D
Hexanitro-1,3,5-trinitro-1,3,	ug/L	0.416	LT	0.682** D
N-nitro-N-(2,4,6-tetranitroan	ug/L	0.631	LT	0.416** D
			0.631**	LT
				0.631**
<b>ACG and PETN/WATER/HPLC (ug/L)</b>				
Laboratory ID Number	Units	CRL	UB08049	UC00384
Parameter				UC00385
Nitroglycerine	ug/L	1.49	LT	0.39** K
Pentaerythritol tetranitrate	ug/L	2	LT	2**
<b>ORGANOSULFUR/WATER/GCFP (ug/L)</b>				
Laboratory ID Number	Units	CRL	MCBW#97	MCBW#103
Parameter				MCBW#104
Benzothiazole	ug/L	2.11	LT	2.11** D
p-Chlorophenylmethyl sulfide	ug/L	1.26	LT	1.26** D
p-Chlorophenylmethyl sulfoxid	ug/L	4.23	LT	4.23** D
p-Chlorophenylmethyl sulfone	ug/L	4.72	LT	4.72** D
Oilthane	ug/L	1.11	LT	1.11** D
Dimethyl disulfide	ug/L	1.14	LT	1.14** D
1,4-Oxathiane	ug/L	1.86	LT	1.86** D
				1.86**
<b>ORGANICS/WATER/IC (ug/L)</b>				
Laboratory ID Number	Units	CRL	MCBW#97	MCBW#103
Parameter				MCBW#104
Chloroacetic acid	ug/L	25	LT	25** D
Fluoroacetic acid	ug/L	25	LT	25** D
Isopropyl methylphosphonate	ug/L	25	LT	25** D
Methylphosphonic acid	ug/L	50	LT	50** D
				50**

**Table G-5. Data Summary Table: Groundwater/Surface Water - Area T-24A Chemical Munitions Disposal Training Area,  
Fort McClellan, Anniston Alabama (Continued)**

<b>Site ID</b>	T24A-G01	T24A-G01	T24A-G02
<b>Field Sample Number</b>	SAIC01	SAIC03	SAIC04
<b>Site Type</b>	WELL	WELL	WELL
<b>Collection Date</b>	10/23/94	2/1/95	4/24/95
<b>Depth (ft)</b>	50	50.39	23.47
<b>Associated Field QC Sample - Site ID</b>			2B.3
<b>Associated Field QC Sample - Field Sample No.</b>			
<b>Associated Field QC Sample - Site ID</b>			
<b>Associated Field QC Sample - Field Sample No.</b>			
<hr/>			
<b>ORGANOSULFUR/SWATER/HPLC (<math>\mu\text{g/L}</math>)</b>			
<b>Laboratory ID Number</b>	MCBW#87	MCBW#103	MCBW#105
<b>Parameter</b>	Units CRL	LT	LT
Thiodiglycol	$\mu\text{g/L}$ 48.8	LT 48.8**	48.8**
Thiodiglycolic acid	$\mu\text{g/L}$ 62.7		
<hr/>			
<b>ORGANOPHOSPHORUSWATER@CCP (<math>\mu\text{g/L}</math>)</b>			
<b>Laboratory ID Number</b>	MCBW#87	MCBW#103	MCBW#105
<b>Parameter</b>	Units CRL	LT	LT
Dilisopropyl methylphosphonate	$\mu\text{g/L}$ 10.5	LT 10.5**	10.5** D
Dimethyl methylphosphonate	$\mu\text{g/L}$ 15.2	LT 15.2**	15.2** D
<hr/>			
<b>ISOPROPYLAMINE IN WATER</b>			
<b>Laboratory ID Number</b>	MCBW#87	MCBW#103	MCBW#105
<b>Parameter</b>	Units CRL	LT	LT
Isopropylamine	$\mu\text{g/L}$ 100	LT 100**	100** D
<hr/>			
<b>HEXA-WA</b>			
<b>Laboratory ID Number</b>	UB08049	N/A	N/A
<b>Parameter</b>	Units CRL	N/A	N/A
Hexachlorocyclopentadiene	$\mu\text{g/L}$ 54	LT 0.048**	N/A
Hexachlorobenzene	$\mu\text{g/L}$ 12	ND 0.031** T	N/A
<hr/>			
<b>BIOLOGICAL OXYGEN DEMAND (<math>\mu\text{g/L}</math>)</b>			
<b>Laboratory ID Number</b>	N/A	N/A	N/A
<b>Parameter</b>	Units CRL	N/A	N/A
Biological Oxygen Demand	$\mu\text{g/L}$ 4000	N/A	N/A
<hr/>			

**Table G-5. Data Summary Table: Groundwater/Surface Water - Area T-24A Chemical Munitions Disposal Training Area, Fort McClellan, Anniston Alabama (Continued)**

Site ID	T24A-G03	T24A-G03	T24A-S02	T24A-S02A	T24A-W02
Field Sample Number	SAIC01	SAIC03	SAIC01	SAIC01	SAIC01
Site Type	WELL	WELL	UNKG	UNKG	CREK
Collection Date	10/23/94	21/05	9/13/94	9/13/94	6/23/94
Depth (ft)	18.5	12.9	0	0	0
Associated Field QC Sample - Site ID					
Associated Field QC Sample - Field Sample No.					
Associated Field QC Sample - Site ID					
Associated Field QC Sample - Field Sample No.					
Associated Field QC Sample - Site ID					
Associated Field QC Sample - Field Sample No.					
<b>METALS/WATER (µg/L)</b>					
Laboratory ID Number	UB08050	UC00385	UB05755	UB05758	UB04323
Parameter	Units	CRL	Units	Units	Units
Antimony	µg/L	3	LT	6**	LT
Arsenic	µg/L	2.35	LT	2.35**	LT
Lead	µg/L	4.47	LT	4.47**	LT
Selenium	µg/L	2.53	LT	2.53**	LT
Thallium	µg/L	1	LT	2.44**	LT
Mercury	µg/L	0.1	LT	0.1**	LT
Silver	µg/L	10	LT	10**	LT
Aluminum	µg/L	112	2089**	1229**	6320**
Boron	µg/L	230	LT	230**	LT
Barium	µg/L	2.82	68**	40.9**	230**
Beryllium	µg/L	1.12	LT	1.12**	LT
Cadmium	µg/L	4	LT	5**	LT
Calcium	µg/L	105	778*	622**	1170**
Cobalt	µg/L	25	LT	25**	LT
Copper	µg/L	18.8	LT	18.8**	LT
Chromium	µg/L	16.8	LT	16.8**	LT
Iron	µg/L	77.5	10600**	10200**	18400**
Potassium	µg/L	1240	LT	1240**	LT
Manganese	µg/L	135	7200**	7190**	10800**
Molybdenum	µg/L	9.87	782**	777**	1460**
Sodium	µg/L	52.7	LT	52.7**	LT
Nickel	µg/L	270	1180**	1280**	1780**
Tin	µg/L	32.1	LT	32.1**	LT
Tellurium	µg/L	59.9	LT	59.9**	LT
Vanadium	µg/L	118	LT	118**	LT
Zinc	µg/L	27.6	LT	27.6**	LT
	18	LT	21.9**	22.8**	41.9**
<b>VOLATILESWATER (µg/L)</b>					
Laboratory ID Number	UB08050	UC00385	UB05755	UB05758	UB04323
Parameter	Units	CRL	Units	Units	Units
1,1,1-Trichloroethane	µg/L	1	LT	1**	LT
1,1,2-Trichloroethane	µg/L	1	LT	1**	LT
1,1-Dichloroethene	µg/L	1	LT	1**	LT
1,1-Dichloroethene	µg/L	1	LT	1**	LT
1,2-Dichloroethene	µg/L	5	LT	5**	LT
1,2-Dichloroethane	µg/L	1	LT	1**	LT
1,2-Dichloropropane	µg/L	1	LT	1**	LT
1,3-Dichlorobenzene	µg/L	1	LT	1**	LT

**Table G-5. Data Summary Table: Groundwater/Surface Water - Area T-24A Chemical Munitions Disposal Training Area, Fort McClellan, Anniston Alabama (Continued)**

Site ID	Field Sample Number	T24A-G03	T24A-S02	T24A-S02A	T24A-W02
Site Type	SAIC01	SAIC01	SAIC01	SAIC01	CREEK
Collection Date	WELL 10/23/94	WELL 2/19/95	UNKG 9/13/94	UNKG 9/13/94	6/23/94
Depth (ft)	18.5	12.8	0	0	0
Associated Field QC Sample - Site ID					
Associated Field QC Sample - Site ID					
Associated Field QC Sample - Site ID					
Associated Field QC Sample - Site ID					
1,3-Dichloropropane	µg/L 4.8	LT	4.8**	LT	4.8**
1,3-Dimethylbenzene	µg/L 1	LT	1**	LT	1**
2-Chloroethylvinyl Ether	µg/L 3.5	LT	3.5**	LT	3.5**
Acetone	µg/L 6	LT	8**	LT	8**
Acylonitrile	µg/L 8.4	LT	8.4**	LT	8.4**
Bromodichloromethane	µg/L 1	LT	1**	LT	1**
Chloroethane	µg/L 8	LT	8**	LT	8**
Benzene	µg/L 1	LT	1**	LT	1**
Trichlorofluoromethane	µg/L 1	LT	1**	LT	1**
Carbon Tetrachloride	µg/L 1	LT	1**	LT	1**
Methylene Chloride	µg/L 1	LT	1**	LT	1**
Bromomethane	µg/L 14	LT	14**	LT	14**
Chloromethane	µg/L 1.2	LT	1.2**	LT	1.2**
Bromoform	µg/L 11	LT	11**	LT	11**
Chloroform	µg/L 1	LT	1**	LT	1**
Chlorobenzene	µg/L 1	LT	1**	LT	1**
Dibromochloromethane	µg/L 1	LT	1**	LT	1**
Ethylbenzene	µg/L 1	LT	1**	LT	1**
Toluene	µg/L 1	LT	1**	LT	1**
Methylenehydride	µg/L 10	LT	10**	LT	10**
Methylisobutylketone	µg/L 1.4	LT	1.4**	LT	1.4**
1,1,2,2-Tetrachloroethane	µg/L 1.5	LT	1.5**	LT	1.5**
Tetrachloroethene	µg/L 1	LT	1**	LT	1**
Trichloroethene	µg/L 1	LT	1**	LT	1**
1,2-Dimethylbenzene	µg/L 2	LT	2**	LT	2**
Vinyl Chloride	µg/L 1	LT	1**	LT	1**
TICs	1 (3.0)	LT	0 (0.0)	LT	0 (0.0)
SEMIVOLATILES/WATER (µg/L)					
Laboratory ID Number	UB06050	UB05385	UB05755	UB05756	UB04323
Parameter	Units CRL	Units CRL	Units CRL	Units CRL	Units CRL
1,2,3-Trichlorobenzene	µg/L 5.8	LT	5.8**	LT	5.8**
1,2,4-Trichlorobenzene	µg/L 2.4	LT	2.4**	LT	2.4**
1,2-Dichlorobenzene	µg/L 1.2	LT	1.2**	LT	1.2**
1,2-Diphenylhydrazine	µg/L 13	LT	13**	LT	13**
1,3-Dichlorobenzene	µg/L 3.4	LT	3.4**	LT	3.4**
1,4-Dichlorobenzene	µg/L 1.5	LT	1.5**	LT	1.5**
2,3,6-Trichlorophenol	µg/L 1.7	LT	1.7**	LT	1.7**
2,4,5-Trichlorophenol	µg/L 2.8	LT	2.8**	LT	2.8**
2,4,6-Trichlorophenol	µg/L 3.6	LT	3.6**	LT	3.6**
2,4-Dichlorophenol	µg/L 8.4	LT	8.4**	LT	8.4**
2,4-Dimethylphenol	µg/L 4.4	LT	4.4**	LT	4.4**
2,4-Dinitrophenol	µg/L 17.6	LT	18.0**	LT	18.0**

**Table G-5. Data Summary Table: Groundwater/Surface Water - Area T-24A Chemical Munitions Disposal Training Area, Fort McClellan, Anniston Alabama (Continued)**

Site ID	Field Sample Number	T24A-G03 SAIC01 WELL 102384 18.5	T24A-G03 SAIC03 WELL 211985 12.8	T24A-S02 SAIC01 UNKG 9/13/84 0	T24A-S02A SAIC01 UNKG 9/13/84 0	T24A-W02 SAIC01 CREK 6/23/84 0
2,6-Dinitroaniline	19g/L	8.8	LT	8.8**	LT	8.8**
2-Chlorophenol	19g/L	2.8	LT	2.8**	LT	2.8**
2-Chlorophthalene	19g/L	2.6	LT	2.6**	LT	2.6**
2-Methylnaphthalene	19g/L	1.3	LT	1.3**	LT	1.3**
2-Methyl Phenol	19g/L	3.8	LT	3.6**	LT	3.6**
2-Nitrophenol	19g/L	8.2	LT	8.2**	LT	8.2**
3,3-Dichlorobenzidine	19g/L	6	LT	6**	LT	5**
3,5-Dinitro-aniline	19g/L	21	LT	21**	LT	21**
3-Nitroaniline	19g/L	15	LT	15**	LT	15**
3-Nitrotoluene	19g/L	2.9	LT	2.9**	LT	2.9**
4-Bromophenyl Phenyl Ether	19g/L	22	LT	22**	LT	22**
4-Chloro-3-methylphenol	19g/L	8.5	LT	8.5**	LT	8.5**
4-Chlorophenyl Phenyl Ether	19g/L	23	LT	23**	LT	23**
4-Methyl Phenol	19g/L	2.8	LT	2.8**	LT	2.8**
4-Nitrophenol	19g/L	98	LT	98**	LT	98**
Aceanaphthene	19g/L	5.8	LT	5.8**	LT	5.8**
Anisaphthylene	19g/L	5.1	LT	5.1**	LT	5.1**
Anthracene	19g/L	5.2	LT	5.2**	LT	5.2**
Atrazine	19g/L	5.9	LT	5.9**	LT	5.9**
but(2-Chloroethoxy) Methane	19g/L	6.8	LT	6.8**	LT	6.8**
bis(2-Chloroisopropyl) Ether	19g/L	5	LT	5**	LT	5**
bis(2-Ethylhexyl)phthalate	19g/L	0.88	LT	0.88**	LT	0.88**
Butyl Benzyl Phthalate	19g/L	7.7	LT	7.7**	LT	7.7**
Benzo(g,h,i)perylene	19g/L	28	LT	28**	LT	28**
Bromacil	19g/L	15	LT	15**	LT	15**
Benzyl Alcohol	19g/L	2.9	LT	2.9**	LT	2.9**
Hexachloroethane	19g/L	4	LT	4**	LT	4**
Dibromochloropropane	19g/L	8.3	LT	8.3**	LT	8.3**
Dibenzofuran	19g/L	12	LT	12**	LT	12**
Dicyclopentadiene	19g/L	5.1	LT	5.1**	LT	5.1**
Vapona	19g/L	6.6	LT	6.6**	LT	6.6**
Clethyl Phthalate	19g/L	8.5	LT	8.5**	LT	8.5**
Fluoranthene	19g/L	6.9	LT	6.9**	LT	6.9**
Dimethyl Phthalate	19g/L	2.2	LT	2.2**	LT	2.2**
d,N-Butyl Phthalate	19g/L	33	LT	33**	LT	33**
d,N-Octyl Phthalate	19g/L	1.5	LT	1.5**	LT	1.5**
Endosulfan Sulfate	19g/L	50	LT	50**	LT	50**
Fluorene	19g/L	24	LT	24**	LT	24**
Heptachlorobutadiene	19g/L	9.2	LT	9.2**	LT	9.2**
Iophorone	19g/L	8.7	LT	8.7**	LT	8.7**
Mitex	19g/L	2.4	LT	2.4**	LT	2.4**
Malathion	19g/L	21	LT	21**	LT	21**
Naphthalene	19g/L	0.5	LT	0.5**	LT	0.5**

**Table G-5. Data Summary Table: Groundwater/Surface Water - Area T-24A Chemical Munitions Disposal Training Area,  
Fort McClellan, Anniston Alabama (Continued)**

Site ID	Field Sample Number	T24A-G03 SAIC01 WELL 10/23/94 18.5	T24A-S03 SAIC03 WELL 2/19/95 12.8	T24A-S02 SAIC01 UNKG 9/13/94 0	T24A-S02A SAIC01 UNKG 9/13/94 0	T24A-W02 SAIC01 CREEK 6/23/94 0
<b>Associated Field QC Sample - Site ID</b>						
Nitrobenzene	190L	3.7	LT	3.7**	LT	3.7**
N-Nitrosodimethylamine	190L	6.7	LT	9.7**	LT	9.7**
N-Nitroso-di-N-propylamine	190L	6.8	LT	6.8**	LT	6.8**
N-Nitrostodiphenylamine	190L	3.7	LT	3.7**	LT	3.7**
Phenanthrene	190L	8.9	LT	9.9**	LT	9.9**
Phenol	190L	2.2	LT	2.2**	LT	2.2**
Parathion	190L	37**	LT	37**	LT	37**
Pyrene	190L	17**	LT	17**	LT	17**
Supona	190L	19**	LT	19**	LT	19**
Pentachlorophenol	190L	1	LT	1** Z	LT	1** T
Benzol(b)pyrene	190L	0.2	LT	0.0208**	LT	0.0208**
Benzol(b)fluoranthene	190L	0.2	LT	0.0402**	LT	0.0402**
Benzol(k)fluoranthene	190L	0.2	LT	0.0193**	LT	0.0193**
Chrysene	190L	0.2	LT	0.0195**	LT	0.0195**
Dibenzo(a,h)anthracene	190L	0.3	LT	0.0398**	LT	0.0398**
Indeno(1,2,3-cd)pyrene	190L	0.4	LT	0.0188**	LT	0.0188**
Benzol(e)anthracene	190L	0.1	LT	0.0198**	LT	0.0198**
TICs	190L	4 (28.0)		1 (40.0)		3 (28.0)
<b>PESTICIDES/WATER/GC/C (µg/L)</b>						
Laboratory ID Number		UB06050	UB060385	UB05755	UB05756	UB04323
Parameter		Units	CRL			
alpha-BHC	190L	0.0025	LT	0.0025**	LT	0.0025**
Endosulfan I	190L	0.0025	LT	0.0025**	LT	0.0025**
Aldrin	190L	0.0074	LT	0.0074**	LT	0.0074**
beta-BHC	190L	0.0089	LT	0.0089**	LT	0.0089**
Endosulfan II	190L	0.0077	LT	0.0077**	LT	0.0077**
Chlordane	190L	0.0312	LT	0.0312**	LT	0.0312**
dieldrin	190L	0.0034	LT	0.0034**	LT	0.0034**
Endrin	190L	0.0074**	LT	0.0074**	LT	0.0074**
Endrin Aldehyde	190L	0.0178	LT	0.0178**	LT	0.0178**
Heptachlor	190L	0.0504**	LT	0.0504**	LT	0.0504**
Heptachlor Epoxide	190L	0.0025	LT	0.0025**	LT	0.0025**
Isodrin	190L	0.0083	LT	0.0083**	LT	0.0083**
Lindane	190L	0.0025	LT	0.00367** UB	LT	0.0025**
Methoxychlor	190L	0.075	LT	0.0025**	LT	0.0025**
PCB-1016	190L	0.385	LT	0.385**	LT	0.385**
PCB-1260	190L	0.178	LT	0.178**	LT	0.178**
4,4'-DDD	190L	0.0081	LT	0.0081**	LT	0.0081**
4,4'-DDE	190L	0.0039	LT	0.0039**	LT	0.0039**
4,4'-DDT	190L	0.0025	LT	0.0025**	LT	0.0025**
Toxaphene	190L	1.64**	LT	1.64**	LT	1.64**

**Table G-5. Data Summary Table: Groundwater/Surface Water - Area T-24A Chemical Munitions Disposal Training Area,  
Fort McClellan, Anniston Alabama (Continued)**

Site ID	T24A-G03	T24A-G03	T24A-S02	T24A-S02A	T24A-W02
Field Sample Number	SAIC01	SAIC03	SAIC01	SAIC01	SAIC01
Site Type	WELL	WELL	UNKG	UNKG	CREK
Collection Date	10/23/04	2/19/05	9/13/04	9/13/04	6/23/04
Depth (ft)	18.5	12.8	0	0	0
Associated Field QC Sample - Site ID					
Associated Field QC Sample - Site ID					
Associated Field QC Sample - Site ID					
<b>EXPLOSIVES/WATER/HPLC (<math>\mu\text{g/L}</math>)</b>					
Laboratory ID Number		UB06050	UC060385	UB05755	UB05756
Parameter	Units	CRL			
1,3,5-Trinitrobenzene	$\mu\text{g/L}$	0.21	0.28** U	LT	0.34** U
1,3-Dinitrobenzene	$\mu\text{g/L}$	0.458	LT	0.458**	LT
2,4,6-Tinitrobenzene	$\mu\text{g/L}$	0.428	LT	0.428**	LT
2,4-Dinitrotoluene	$\mu\text{g/L}$	0.397	LT	0.397**	LT
2,6-Dinitrotoluene	$\mu\text{g/L}$	0.8	LT	0.8**	LT
Cyclohexemethylenetrinitra	$\mu\text{g/L}$	0.533	LT	0.533**	LT
Nitrobenzene	$\mu\text{g/L}$	0.692	LT	0.682**	LT
Hexahydro-1,3,5-trinitro-1,3,	$\mu\text{g/L}$	0.418	LT	0.418**	LT
N-methyl-N-(2,4,6-tetranitroan	$\mu\text{g/L}$	0.831	LT	0.631**	LT
<b>NG and PETN/WATER/HPLC (<math>\mu\text{g/L}</math>)</b>					
Laboratory ID Number		UB06050	UC060385	UB05755	UB05756
Parameter	Units	CRL			
Nitroglycerine	$\mu\text{g/L}$	1.49	LT	1.49** H	LT
Pentaerythritol Tetranitrate	$\mu\text{g/L}$	2	LT	2**	LT
<b>ORGANOSULFUR/WATER/GC/FP (<math>\mu\text{g/L}</math>)</b>					
Laboratory ID Number		MCBW#98	MCBW#108	MCBW#98	MCBW#93
Parameter	Units	CRL			
Benzothiazole	$\mu\text{g/L}$	2.11	LT	2.11**	LT
p-Chlorophenylmethyl sulfide	$\mu\text{g/L}$	1.26	LT	1.28**	LT
p-Chlorophenylmethyl sulfoxide	$\mu\text{g/L}$	4.23	LT	4.23**	LT
p-Chlorophenylmethyl sulfone	$\mu\text{g/L}$	4.72	LT	4.72**	LT
Dithiane	$\mu\text{g/L}$	1.11	LT	1.11**	LT
Dimethyl disulfide	$\mu\text{g/L}$	1.14	LT	1.14**	LT
1,4-Oxathiane	$\mu\text{g/L}$	1.98	LT	1.98**	LT
<b>ORGANICS/WATER/IC (<math>\mu\text{g/L}</math>)</b>					
Laboratory ID Number		MCBW#98	MCBW#108	MCBW#98	MCBW#93
Parameter	Units	CRL			
Chloroacetic acid	$\mu\text{g/L}$	25	LT	25**	LT
Fluoroacetic acid	$\mu\text{g/L}$	25	LT	25**	LT
Isopropyl methylphosphonate	$\mu\text{g/L}$	25	LT	25**	LT
Methylphosphoric acid	$\mu\text{g/L}$	50	LT	50**	LT

**Table G-5. Data Summary Table: Groundwater/Surface Water - Area T-24A Chemical Munitions Disposal Training Area,  
Fort McClellan, Anniston Alabama (Continued)**

Site ID	Field Sample Number	T24A-G03 SAIC01 WELL 102394	T24A-G03 SAIC01 WELL 2/185 12.8	T24A-S02 SAIC01 UNKG 9/1394 0	T24A-S02A SAIC01 UNKG 9/1394 0
<b>Associated Field QC Sample • Site ID</b>					
Associated Field QC Sample • Site ID					
Associated Field QC Sample • Site ID					
Associated Field QC Sample • Site ID					
<b>ORGANOANALYTICALS/URSWATER/GC/FP (<math>\mu\text{g/L}</math>)</b>					
Laboratory ID Number	Units	CRL	MGBW#88	MGBW#88	MGBW#88
Parameter	µg/L	46.8	LT	46.8**	LT
Diiodoglycerol	µg/L	16.2	LT	16.2**	LT
Thiodiglycolic acid	µg/L	52.7			
<b>ORGANOPHOSPHORWATER/GC/FP (<math>\mu\text{g/L}</math>)</b>					
Laboratory ID Number	Units	CRL	MGBW#88	MGBW#88	MGBW#88
Parameter	µg/L	10.6	LT	10.6**	LT
Dimethyl methylphosphonate	µg/L	16.2	LT	16.2**	LT
Dimethyl methylphosphonate	µg/L	12	ND	0.03**	LT
<b>ISOPROPYLAMINE IN WATER</b>					
Laboratory ID Number	Units	CRL	MGBW#88	MGBW#88	MGBW#88
Parameter	µg/L	100	LT	100**	LT
Isopropylamine	µg/L	100	LT	100**	LT
<b>HEXA-WA</b>					
Laboratory ID Number	Units	CRL	UB06050	N/A	N/A
Parameter	µg/L	64	LT	0.048*	N/A
Hexachlorocyclopentadiene	µg/L	12	ND	0.03**	N/A
Hexachlorobenzene	µg/L	12	ND	0.03**	N/A
<b>BIOLOGICAL OXYGEN DEMAND (<math>\mu\text{g/L}</math>)</b>					
Laboratory ID Number	Units	CRL	N/A	N/A	N/A
Parameter	µg/L	4000	N/A	N/A	N/A
Biological Oxygen Demand	µg/L	4000	N/A	N/A	N/A
<b>Footnotes:</b>					
* Data collected from chemical transfer file (Phase I)					
** Data collected from AEC Pyramid system (Phase III)					
ID - Identification					
N/A - Not applicable					
NRF - Analysis requested, not yet received					
QC - Quality control					
TICs - Tentatively identified Compound : number of TICs (total value)					
Boolean Codes					
LT - Less than the certified reporting limit / method detection level					
Flagging Codes					
B - Non-demonstrated/validated method performed for USAEC.					
B - Analyte found in the method blank or QC blank as well as the sample.					
C - Analysis requested, not yet received					
D - Duplicate analysis					
K - Reported results are affected by interference or high background.					
Q - Sample interference obscured peak of interest.					
T - Non-target compound analyzed for but not detected (non-GC/MS methods).					
U - Analysis is unconfirmed.					
Z - Non-target compound analyzed for and detected (non-GC/MS methods).					
Data Qualifiers					
? - Control chart not yet approved by USAEC.					
I - The low-spike recovery is high.					
J - The low-spike recovery is low.					